2 8467

Access DB# ____________

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: [illegible] Examiner # : [illegible] Date: [illegible]
Art Unit: [illegible] Phone Number ~~30~~ [illegible] Serial Number: [illegible]
Mail Box and Bldg/Room Location: [illegible] Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is ~~submitted, please~~ prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Dialysis solution [illegible]

Inventors (please provide full names): [illegible]

Earliest Priority Filing Date: 8/7/97

****For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.***

Please search for a reference disclosing a dialysis solution (either for hemo- or peritoneal dialysis) containing any of the following: folic acid, Vitamin B6, thiamine and Vitamin B12. [illegible] or vitamin C.

Claims 1-50 are attached.

Thanks.

Point of Contact:
Alex Waclawiw
Technical Info. Specialist
CM1 12C14 Tel: 308-4491

****

STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher:	NA Sequence (#)	STN
Searcher Phone #:	AA Sequence (#)	Dialog
Searcher Location:	Structure (#)	Questel/Orbit
Date Searcher Picked Up: [illegible]	Bibliographic	Dr.Link
Date Completed: [illegible]	Litigation	Lexis/Nexis
Searcher Prep & Review Time:	Fulltext	Sequence Systems
Clerical Prep Time:	Patent Family	WWW/Internet
Online Time:	Other	Other (specify)

23

PTO-1590 (1-2000)

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     (FILE 'MEDLINE' ENTERED AT 13:22:40 ON 16 NOV 2000)
                DEL HIS Y
                E FOLIC ACID/CN

     FILE 'REGISTRY' ENTERED AT 13:24:14 ON 16 NOV 2000
                E FOLIC ACID/CN
L1              1 S E3
                E THIAMINE/CN
L2              1 S E3
                E VITAMIN B12/CN
L3              1 S E3
                E VITAMIN B6/CN
L4              1 S E3

     FILE 'HCAPLUS' ENTERED AT 13:25:12 ON 16 NOV 2000
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B6
L7          23741 S FOLIC ACID OR FOLATE OR  THIAMINE OR VITAMIN# (2W) (B12 OR
B6
L8           8801 S (DIALYSIS OR HEMODIALYSIS )/CW
L9             53 S L8 AND (L1 OR L7)
L10         32052 S THERAPEUT?
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L13            26 S L12 AND L9
L14         12878 S DIALYSIS OR HEMODIALYSIS
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L16             7 S L15 AND THERAP?
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L22            33 S L13 OR L16 OR L17
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FILE 'REGISTRY' ENTERED AT 13:32:39 ON 16 NOV 2000
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STRUCTURE FILE UPDATES:   15 NOV 2000  HIGHEST RN 303006-84-0
DICTIONARY FILE UPDATES:  15 NOV 2000  HIGHEST RN 303006-84-0

TSCA INFORMATION NOW CURRENT THROUGH July 8, 2000

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Structure search limits have been increased.  See HELP SLIMIT
for details.

=> d que l1;d l1;d que l2 ;d l2;d que l3;d l3;d que l4;d l4

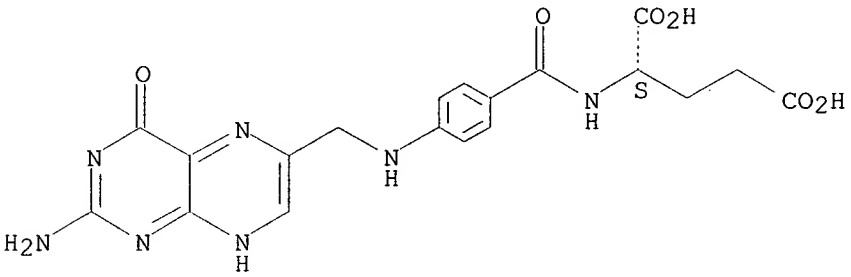
L1             1 SEA FILE=REGISTRY ABB=ON  "FOLIC ACID"/CN



L1   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2000 ACS
RN   59-30-3  REGISTRY
CN   L-Glutamic acid, N-[4-[[(2-amino-1,4-dihydro-4-oxo-6-
     pteridinyl)methyl]amino]benzoyl]- (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Folic acid (8CI)
OTHER NAMES:
CN   Acifolic
CN   Cytofol
CN   Dosfolat B activ
CN   Folacid
CN   Folacin
CN   Folbal
CN   Folcidin
CN   Folettes
CN   Foliamin
CN   Folipac
CN   Folsan
CN   Folsaure
CN   Folsav
CN   Folvite
CN   Incafolic
CN   Liver Lactobacillus casei factor
CN   Millafol
CN   PGA
CN   Pteroyl-L-glutamic acid
CN   Pteroyl-L-monoglutamic acid
CN   Pteroylglutamic acid
CN   Pteroylmonoglutamic acid
CN   Vitamin Bc
CN   Vitamin Be
```

CN Vitamin M
FS STEREOSEARCH
DR 33609-88-0
MF C19 H19 N7 O6
CI COM
LC STN Files: AGRICOLA, AIDSLINE, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS,
BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DIOGENES, DRUGU, EMBASE, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IMSDIRECTORY, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXLINE, TOXLIT, USAN, USPATFULL, VETU
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**, WHO
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



7731 REFERENCES IN FILE CA (1967 TO DATE)
771 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
7743 REFERENCES IN FILE CAPLUS (1967 TO DATE)
9 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L2 1 SEA FILE=REGISTRY ABB=ON THIAMINE/CN

L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2000 ACS
RN 59-43-8 REGISTRY
CN Thiazolium,
3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-4-methyl- chloride (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **Thiamine (8CI)**
OTHER NAMES:
CN Aneurine
CN Apatate Drape
CN Beivon
CN Bethiamin
CN Oryzanin
CN Thiacoat
CN Thiamin

CN Thiamine monochloride
CN Vitamin B1
CN Vitaneurin
DR 57777-32-9, 55463-15-5, 115461-66-0, 100660-17-1
MF C12 H17 N4 O S . Cl
CI COM
LC STN Files: AGRICOLA, AIDSLINE, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS,
BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DIOGENES, DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, NAPRALERT, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXLINE, TOXLIT, USAN, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**, WHO
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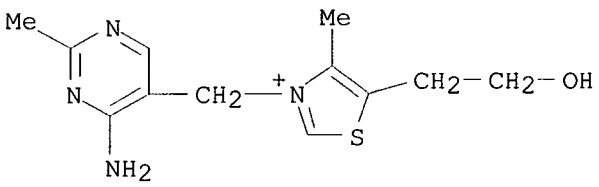
CRN (70-16-6)



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9232 REFERENCES IN FILE CA (1967 TO DATE)
222 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
9238 REFERENCES IN FILE CAPLUS (1967 TO DATE)
5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

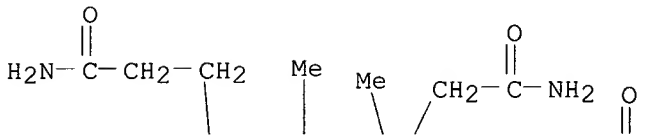
L3 1 SEA FILE=REGISTRY ABB=ON "VITAMIN B12"/CN

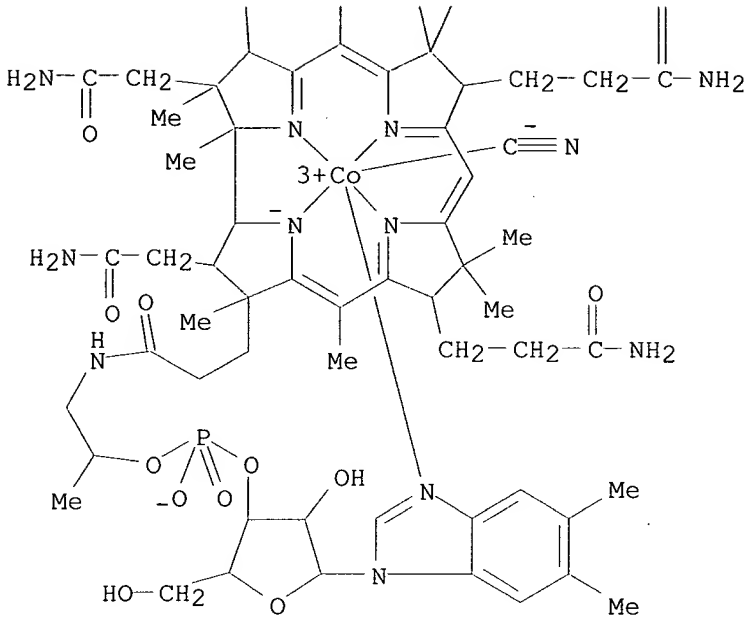
L3 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2000 ACS
RN 68-19-9 REGISTRY
CN **Vitamin B12 (8CI, 9CI)** (CA INDEX NAME)
OTHER NAMES:
CN 1H-Benzimidazole,
5,6-dimethyl-1-(3-O-phosphono-.alpha.-D-ribofuranosyl)-,
monoester with cobinamide cyanide, inner salt
CN 5,6-Dimethylbenzimidazolyl cyanocobamide
CN 5,6-Dimethylbenzimidazolyl-Co-cyanocobamide
CN Anacobin
CN B-Twelve
CN B-Twelve Ora
CN Betalin 12

CN Betaline 12
CN Betolvex
CN Byladoce
CN CN-B12
CN Cobalamin, cyanide
CN Cobalamin, cyano-
CN Cobalamin, cyano-5,6-dimethylbenzimidazole-
CN Cobalin
CN Cobamide, .alpha.-5,6-dimethyl-1H-benzimidazolyl-, cyanide
CN Cobamide, cyano-5,6-dimethyl-1H-benzimidazole-
CN Cobamin
CN Cobinamide, cyanide, dihydrogen phosphate (ester), inner salt, 3'-ester with 5,6-dimethyl-1-.alpha.-D-ribofuranosyl-1H-benzimidazole
CN Cotel
CN Covit
CN Crystamin
CN Cyano-5,6-dimethylbenzimidazolylcobamide
CN Cyano-B12
CN Cyanocobalamin
CN Cyanocobalamine
CN Cycolamin
CN Cykobemin
CN Cykobeminet
CN Cytacon
CN Cytamen
CN Cytobion
CN Depinar
CN Dobetin
CN Docemine
CN Docibin
CN Docigram
CN Dodecabee
CN Dodecavite
CN Dodex
CN Ducobee
CN Duodecibin
CN Embiol
CN Emociclina
CN Eritrone
CN Erycytol
CN Erythrotin
CN Euhaemon
CN Extrinsic factor
CN Factor II
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for DISPLAY
DR 8023-26-5, 8039-03-0, 11037-08-4, 24436-34-8
MF C63 H88 Co N14 O14 P
CI CCS, COM
LC STN Files: ADISINSIGHT, AGRICOLA, AIDSLINE, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DIOGENES, DRUGU, EMBASE, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IMSDIRECTORY, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PHAR, PIRA, PROMT, RTECS*, SPECINFO, TOXLINE, TOXLIT, TULSA, USAN, USPATFULL, VETU
(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**, WHO
(**Enter CHEMLIST File for up-to-date regulatory information)

PAGE 1-A





8189 REFERENCES IN FILE CA (1967 TO DATE)
217 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
8205 REFERENCES IN FILE CAPLUS (1967 TO DATE)
21 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L4 1 SEA FILE=REGISTRY ABB=ON "VITAMIN B6"/CN

L4 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2000 ACS
RN 8059-24-3 REGISTRY
CN **Vitamin B6 (8CI, 9CI)** (CA INDEX NAME)
OTHER NAMES:
CN Adermine
CN Vitamin H
DR 12001-78-4
MF Unspecified
CI COM, MAN
LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, DIOGENES, EMBASE, IFICDB, IFIPAT, IFIUDB, MEDLINE, NIOSHTIC, PROMT, TOXLINE, TOXLIT, USPATFULL
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
3989 REFERENCES IN FILE CA (1967 TO DATE)
127 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

3997 REFERENCES IN FILE CAPLUS (1967 TO DATE)

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=> fil hcaplus

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FILE COVERS 1967 - 16 Nov 2000  VOL 133 ISS 21
FILE LAST UPDATED: 15 Nov 2000  (20001115/ED)

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Now you can extend your author, patent assignee, patent information,
and title searches back to 1907.  The records from 1907-1966 now have
this searchable data in CAOLD.  You now have electronic access to all
of CA: 1907 to 1966 in CAOLD and 1967 to the present in HCAPLUS on STN.
'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> d his l5-


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B6
L7         23741 S FOLIC ACID OR FOLATE OR  THIAMINE OR VITAMIN# (2W) (B12 OR
B6
L8          8801 S (DIALYSIS OR HEMODIALYSIS )/CW
L9            53 S L8 AND (L1 OR L7)
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L14        12878 S DIALYSIS OR HEMODIALYSIS
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L18        23742 S L17 OR L7
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L22           33 S L13 OR L16 OR L17
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FILE 'REGISTRY' ENTERED AT 13:32:39 ON 16 NOV 2000

FILE 'HCAPLUS' ENTERED AT 13:33:12 ON 16 NOV 2000

=> d .ca l22 1-33

L22 ANSWER 1 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 2000:725454 HCAPLUS
DOCUMENT NUMBER: 133:286559
TITLE: Improved **dialysis** solutions and methods
INVENTOR(S): Khalifah, Raja; Hudson, Billy
PATENT ASSIGNEE(S): Kansas University Medical Center, USA
SOURCE: PCT Int. Appl., 124 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000059493	A2	20001012	WO 2000-US9241	20000406

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-127906 19990406
OTHER SOURCE(S): MARPAT 133:286559
AB The present invention provides improved dialysis compns. and methods for dialysis comprising utilizing the disclosed AGE (advanced glycation end-products) inhibitors, together with methods to reduce dialysis-related complications and disorders. Results demonstrated that certain vitamin B1 and B6 derivs. are capable of inhibiting late AGE formation.
IC ICM A61K031-00
CC 63-8 (Pharmaceuticals)
ST vitamin B **dialysis** soln glycation
IT Carbohydrates, biological studies
RL: FMU (Formation, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(Amadori compds.; **dialysis** solns. comprising advanced glycation end-product inhibitors)
IT **Dialysis**
Glycation
Ultrafiltration
(**dialysis** solns. comprising advanced glycation end-product inhibitors)
IT 50-69-1, Ribose 50-99-7, Glucose, biological studies 54-47-7, Pyridoxal 5'-phosphate 57-48-7, Fructose, biological studies 58-86-6, Xylose, biological studies 59-23-4, Galactose, biological studies

59-43-8, **Thiamine**, biological studies 63-42-3, Lactose 65-23-6, Pyridoxine 65-42-9, Lyxose 66-72-8, Pyridoxal 69-79-4, Maltose 85-87-0, Pyridoxamine 136-09-4, **Thiamine** pyrophosphate 147-81-9, Arabinose 532-40-1, **Thiamine** monophosphate 3458-28-4, Mannose
RL: RCT (Reactant); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(**dialysis** solns. comprising advanced glycation end-product inhibitors)

L22 ANSWER 2 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 2000:444381 HCAPLUS
DOCUMENT NUMBER: 133:99302
TITLE: Controlled comparison of L-5-methyltetrahydrofolate versus **folic acid** for the treatment of hyperhomocysteinemia in **hemodialysis** patients
AUTHOR(S): Bostom, Andrew G.; Shemin, Douglas; Bagley, Pamela; Massy, Ziad A.; Zanabli, Abdul; Christopher, Kenneth; Spiegel, Paul; Jacques, Paul F.; Dworkin, Lance; Selhub, Jacob
CORPORATE SOURCE: Division of General Internal Medicine, Memorial Hospital of Rhode Island, Pawtucket, RI, 02860, USA
SOURCE: Circulation (2000), 101(24), 2829-2832
CODEN: CIRCAZ; ISSN: 0009-7322
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The hyperhomocysteinemia regularly found in hemodialysis patients is largely refractory to combined oral B-vitamin supplementation featuring supraphysiol. doses of folic acid. We evaluated whether a high-dose L-5-methyltetrahydrofolate-based regimen provided improved total homocysteine (tHcy)-lowering efficacy in chronic hemodialysis patients. Methods and Results-We block-randomized 50 chronic, stable hemodialysis patients on the basis of their screening predialysis tHcy levels, sex, and dialysis center into 2 groups of 25 subjects treated for 12 wk with oral folic acid at 15 mg/d (FA group) or an equimolar amt. (17 mg/d) of oral L-5-methyltetrahydrofolate (MTHF group). All 50 subjects also received 50 mg/d of oral vitamin B6 and 1.0 mg/d of oral vitamin B12. The mean percent redns. (.+-.95% CIs) in predialysis tHcy were not significantly different: MTHF, 17.0% (12.0% to 22.0%); FA, 14.8% (9.6% to 20.1%); P=0.444 by matched ANCOVA adjusted for pretreatment tHcy. Final on-treatment values (mean with 95% CI) were MTHF, 20.0 .mu.mol/L (18.8 to 21.2 .mu.mol/L); FA, 19.5 .mu.mol/L (18.3 to 20.7 .mu.mol/L). Moreover, neither treatment resulted in "normalization" of tHcy levels (ie, final on-treatment values <12 .mu.mol/L) among a significantly different or clin. meaningful no. of patients: MTHF, 2 of 25 (8%); FA, 0 of 25 (0%); Fisher's exact test of between-groups difference, P=0.490. Relative to high-dose folic acid, high-dose oral L-5-methyltetrahydrofolate-based supplementation does not afford improved tHcy-lowering efficacy in hemodialysis patients. The preponderance of hemodialysis patients (ie, >90%) exhibit mild hyperhomocysteinemia refractory to treatment with either regimen. This treatment refractoriness is not related to defects in folate absorption or circulating plasma and tissue distribution.
CC 1-8 (Pharmacology)

ST **hemodialysis** hyperhomocysteinemia methyltetrahydrofolate **folic acid**

IT **Dialysis**
(**hemodialysis**; controlled comparison of L-5-methyltetrahydrofolate vs. **folic acid** for the treatment of hyperhomocysteinemia in **hemodialysis** patients)

IT **59-30-3, Folic acid**, biological studies
134-35-0
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(controlled comparison of L-5-methyltetrahydrofolate vs. **folic acid** for the treatment of hyperhomocysteinemia in **hemodialysis** patients)

IT 6027-13-0, Homocysteine
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(controlled comparison of L-5-methyltetrahydrofolate vs. **folic acid** for the treatment of hyperhomocysteinemia in **hemodialysis** patients)

REFERENCE COUNT: 28
REFERENCE(S):
(1) Araki, A; J Chromatogr 1987, V422, P43 HCAPLUS
(2) Bagley, P; Proc Natl Acad Sci U S A 1998, V95, P13217 HCAPLUS
(4) Beaulieu, A; Arterioscler Thromb Vasc Biol 1999, V19, P2918 HCAPLUS
(5) Bostom, A; Ann Intern Med 1997, V127, P1089 HCAPLUS
(6) Bostom, A; Atherosclerosis 1995, V116, P59 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 3 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 2000:419295 HCAPLUS
DOCUMENT NUMBER: 133:26636
TITLE: Effect of high dose **folic acid therapy** on hyperhomocysteinemia in **hemodialysis** patients: results of the vienna multicenter study
AUTHOR(S): Sunder-Plassmann, Gere; Fodinger, Manuela; Buchmayer, Heidi; Papagiannopoulos, Menelaos; Wojcik, Jadwiga; Kletzmayr, Josef; Enzenberger, Brigitte; Janata, Oskar; Winkelmayer, Wolfgang C.; Paul, Gernot; Auinger, Martin; Barnas, Ursula; Horl, Walter H.
CORPORATE SOURCE: Klinische Abteilung fur Nephrologie und Dialyse, Universitatsklinik fur Innere Medizin III, Vienna, A-1090, Austria
SOURCE: J. Am. Soc. Nephrol. (2000), 11(6), 1106-1116
CODEN: JASNEU; ISSN: 1046-6673
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Homocysteine is assocd. with atherosclerosis and enhanced cardiovascular risk. In previous studies, treatment with folic acid up to 15 mg/d failed to correct hyperhomocysteinemia in the majority of end-stage renal disease patients. A dose of 30 or 60 mg of folic acid per day was compared with 15 mg/d in an attempt to normalize hyperhomocysteinemia in 150

hemodialysis patients. In a randomized, double-blind, multicenter study, 144 patients completed the 4-wk treatment period and 121 patients completed the 6-mo follow-up. Total homocysteine plasma levels were reduced by 32.1% (15 mg/d), 29.9% (30 mg/d), or 37.8% (60 mg/d) with no significant differences found between the three treatment groups. Baseline total homocysteine plasma concn. was an independent predictor of the response to folic acid therapy (P = 0.0001), whereas the 5,10-methylenetetrahydrofolate reductase polymorphisms (MTHFR 677C .fwdarw. T and 1298A .fwdarw. C) had no influence. Nevertheless, patients with the MTHFR 677TT genotype more frequently attained normal total homocysteine plasma levels than patients with the CC or CT genotype (P = 0.025). In response to 60 mg of folic acid per day, TT genotype patients had lower folate plasma levels compared to CC or CT genotype patients (P = 0.016). After completion of the 4-wk treatment period with 30 or 60 mg of folic acid per day, there was a marked rebound of total homocysteine plasma levels at the end of the follow-up in patients with the MTHFR 677TT genotype, which even exceeded baseline values in several patients (P = 0.0001). This study clearly demonstrates that doses of 30 or 60 mg of folic acid per day are not more effective than 15 mg/d in reducing hyperhomocysteinemia in regular hemodialysis patients. Patients with the MTHFR 677TT genotype are more likely to realize normal total homocysteine plasma levels. Folic acid at 30 or 60 mg/d but not 15 mg/d results in a rebound of total homocysteine plasma concns. when treatment is stopped.

CC 1-8 (Pharmacology)

ST **folate** hyperhomocysteinemia **hemodialysis**

IT **Dialysis**
(**hemodialysis**; effect of high dose **folic acid therapy** on hyperhomocysteinemia in **hemodialysis** in humans)

IT **59-30-3, Folic acid**, biological studies
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(effect of high dose **folic acid therapy** on hyperhomocysteinemia in **hemodialysis** in humans)

IT 6027-13-0, L-Homocysteine
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(effect of high dose **folic acid therapy** on hyperhomocysteinemia in **hemodialysis** in humans)

REFERENCE COUNT: 32

REFERENCE(S):
(1) Araki, A; J Chromatogr 1987, V422, P43 HCAPLUS
(4) Bagley, P; Proc Natl Acad Sci USA 1998, V95, P13217 HCAPLUS
(6) Bostom, A; Kidney Int 1996, V49, P147 HCAPLUS
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(11) Dierkes, J; Clin Nephrol 1999, V51, P108 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 4 OF 33 HCAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 2000:311922 HCAPLUS

DOCUMENT NUMBER: 132:343700

TITLE: Erythropoietin, **folic acid** deficiency and hyperhomocysteinemia: is there a

possible relationship in chronically hemodialyzed patients?

AUTHOR(S): Korzets, A.; Ori, Y.; Chagnac, A.; Weinstein, T.; Herman, M.; Zevin, D.; Malachi, T.; Gafter, U.
CORPORATE SOURCE: Department of Nephrology, Rabin Medical Center, Petah Tikva, Tel Aviv University, Tel Aviv-Jaffa, Israel
SOURCE: Clin. Nephrol. (2000), 53(1), 48-54
CODEN: CLNHBI; ISSN: 0301-0430
PUBLISHER: Dustri-Verlag Dr. Karl Feistle
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The possible relationships between recombinant human erythropoietin (rhEPO) therapy, serum folic acid and homocysteine levels were examd. in a cohort of stable, chronically hemodialyzed patients. The study was cross-sectional in its first phase and consisted of 3 groups of subjects (group 1: 6 healthy controls; group 2: 7 dialyzed patients not receiving rhEPO; group 3: 14 patients on rhEPO therapy). Hematol. and biochem. parameters were taken after an overnight fast in all subjects. The second phase of the study was prospective, and included 8 dialyzed patients, and investigated the effects of a 6-mo period of folic acid supplementation (10 mg, 3 times a week) on the same parameters examd. in the first phase of the study. In the first part of the study Hb levels were near-normal, or normal, in all patients. No differences in Hb or hematocrit values were obsd. in the 3 groups. 80% Of all hemodialyzed patients had low serum folic acid levels, irresp. of whether they were receiving rhEPO. Serum erythropoietin level was elevated in group 3 (23.3.+-.10.4 mIU/mL). In group 2, serum erythropoietin level was not different from that of the healthy controls (13.5 .+-. 11.2 vs. 8.0 .+-. 5.4 mIU/mL, p = n.s.). Total serum homocysteine levels were elevated in all dialyzed patients (group 2: 24.7 .+-. 9.2 .mu.mol/l; group 3: 31.6 .+-. 14.4 .mu.mol/l), with a significant difference seen when comparing controls and those dialyzed patients on rhEPO therapy (8.7 .+-. 2.2 vs. 31.6 .+-. 14.4 .mu.mol/l; $p < 0.05$). Significant correlations (ANOVA) were obsd. between serum erythropoietin and folic acid levels ($r = -0.382$; $p=0.049$), and between folic acid and homocysteine levels ($r = -0.560$; $p=0.002$). In the second part of the study folic acid supplementation led to a highly significant redn. in homocysteine levels (20.9 .+-. 4.9 vs. 11.9 .+-. 2.5 .mu.mol/l; $p<0.0005$). Two of 3 patients receiving rhEPO therapy, had rhEPO discontinued after commencing folic acid, as Hb levels remained adequate, even without rhEPO. In hemodialyzed patients, the presence of a near-normal Hb level, irresp. of rhEPO therapy, implies efficient erythropoiesis. Without adequate folic acid reserves, folic acid deficiency may develop in these patients and this will aggravate already high homocysteine levels. Therefore, folic acid supplementation is warranted in hemodialyzed patients, esp. in those patients with Hb levels approaching normal. This treatment is safe and effective in reducing homocysteine levels, esp. when given in high doses for prolonged periods of time.
CC 2-9 (Mammalian Hormones)
Section cross-reference(s): 18
ST erythropoietin **hemodialysis** hyperhomocysteinemia **folate** kidney failure
IT Kidney, disease

(failure; erythropoietin, **folic acid** deficiency and hyperhomocysteinemia interrelationship in chronically hemodialyzed patients)

IT **Dialysis**
(**hemodialysis**; erythropoietin, **folic acid** deficiency and hyperhomocysteinemia interrelationship in chronically hemodialyzed patients)

IT **59-30-3, Folic acid**, biological studies
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(erythropoietin, **folic acid** deficiency and hyperhomocysteinemia interrelationship in chronically hemodialyzed patients)

IT 6027-13-0, Homocysteine
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BIOL (Biological study); PROC (Process)
(hyperhomocysteinemia; erythropoietin, **folic acid** deficiency and hyperhomocysteinemia interrelationship in chronically hemodialyzed patients)

IT 11096-26-7, Erythropoietin
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(recombinant human; erythropoietin, **folic acid** deficiency and hyperhomocysteinemia interrelationship in chronically hemodialyzed patients)

REFERENCE COUNT: 41
REFERENCE(S): (1) Araki, A; J Chromatomogr 1987, V422, P43 HCAPLUS
(6) Bostom, A; Kidney Int 1996, V49, P147 HCAPLUS
(9) Carlini, R; Kidney Int 1993, V43, P1010 HCAPLUS
(11) Chauveau, P; Miner Electrolyte Metab 1996, V22, P106 HCAPLUS
(15) Dierkes, J; Clin Nephrol 1999, V51, P108 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 5 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 2000:297700 HCAPLUS
DOCUMENT NUMBER: 133:221175
TITLE: Relationship between methylmalonic acid and cobalamin in uremia
AUTHOR(S): Moelby, Lars; Rasmussen, Karsten; Ring, Troels; Nielsen, Gert
CORPORATE SOURCE: Department of Nephrology, Aalborg Hospital, Aalborg, Den.
SOURCE: Kidney Int. (2000), 57(1), 265-273
CODEN: KDYIA5; ISSN: 0085-2538
PUBLISHER: Blackwell Science, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To evaluate the requirement for routine supplementation with vitamin B12 and to study the effect of a change from injection to oral B12 supplementation, the authors examd. the relationship between cobalamin and methylmalonic acid in plasma from 67 patients on chronic hemodialysis, all in regular therapy with i.m. cobalamin injections (1 mg) every third

month. Tarting just before one cobalamin injection, blood samples were collected once a month during a nine-month withdrawal from regular cobalamin substitution to a final three-month period with cyanocobalamin tablets (1 mg) administered once daily. Plasma cobalamin was above the lower ref. limit in all subjects, and from a peak value one month after the regular injection, the cobalamin concn. during the withdrawal period decreased to a level below the point of origin, followed by a significant rise after cyanocobalamin tablets. The methylmalonic acid concns. were above the ref. interval. In the withdrawal period, the concns. significantly increased further, followed by a significant decrease after oral cyanocobalamin substitution. Thus, the authors demonstrated a within-patient inverse relationship between the concns. of methylmalonic acid and cobalamin in plasma from these uremic patients. Despite the fact that only two of the patients developed subnormal plasma cobalamin values, the authors demonstrated a B12 depletion during the withdrawal period. Treatment with cyanocobalamin tablets once daily was found efficient, but the oral doses should possibly be increased.

CC 14-12 (Mammalian Pathological Biochemistry)
Section cross-reference(s): 9, 18, 63

ST methylmalonate cobalamin plasma uremia **hemodialysis**;
cyanocobalamin **therapy** methylmalonate cobalamin plasma uremia **hemodialysis**; **vitamin B12 therapy**
methylmalonate cobalamin plasma uremia **hemodialysis**

IT Kidney, disease
(failure; methylmalonate and cobalamin of blood plasma of humans with uremia on **hemodialysis**)

IT **Dialysis**
(**hemodialysis**; methylmalonate and cobalamin of blood plasma of humans with uremia on **hemodialysis**)

IT Blood analysis
Blood plasma
(methylmalonate and cobalamin of blood plasma of humans with uremia on **hemodialysis**)

IT 516-05-2, Methylmalonic acid 13408-78-1, Cobalamin
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(methylmalonate and cobalamin of blood plasma of humans with uremia on **hemodialysis**)

IT 68-19-9, Cyanocobalamin
RL: **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(methylmalonate and cobalamin of blood plasma of humans with uremia on **hemodialysis** in response to)

REFERENCE COUNT: 55
REFERENCE(S):
(5) Bostom, A; Kidney Int 1996, V49, P147 HCAPLUS
(8) Chandna, S; Nephron 1997, V75, P259 HCAPLUS
(10) Dierkes, J; Metabolism 1999, V48, P631 HCAPLUS
(11) Felig, P; Annu Rev Biochem 1975, V44, P933 HCAPLUS
(13) Frost, T; Kidney Int 1977, V12, P41 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 6 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 2000:268196 HCAPLUS
DOCUMENT NUMBER: 132:288551
TITLE: Treatment with different doses of **folic**

acid in **hemodialysis** patients:
Effects on **folate** distribution and aminothiol concentrations

AUTHOR(S): Arnadottir, Margret; Gudnason, Vilmundur; Hultberg, Bjorn
CORPORATE SOURCE: Department of Medicine, National University Hospital, Reykjavik, IS-101, Iceland
SOURCE: Nephrol., Dial., Transplant. (2000), 15(4), 524-528
CODEN: NDTREA; ISSN: 0931-0509
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Hyperhomocysteinemia is highly prevalent among hemodialysis patients and may contribute to their increased cardiovascular risk. Treatment with pharmacol. doses of folic acid lowers the plasma homocysteine concn. in these patients. The purpose of the present study was to expand the knowledge about such treatment by testing the effects of stepwise increases in the dose of folic acid on the concns. of plasma and red blood cell folate as well as the total plasma concns. of homocysteine (tHcy), cysteine (tCys), and glutathione (tGSH) in patients on chronic hemodialysis. Fourteen stable hemodialysis patients completed the study which consisted of four consecutive periods, each of 6 wk duration: (i) no treatment with folic acid (control period); (ii) 5 mg of folic acid three times per wk (15 mg/wk); (iii) 5 mg of folic acid daily (35 mg/wk); (iv) 10 mg of folic acid daily (70 mg/wk). Neither plasma or red cell folate nor plasma aminothiol concns. changed significantly during the control period. The mean red cell folate concn. doubled during the administration of folic acid at the dose of 15 mg/wk but at higher doses the further rise was only marginal. The mean folate concn. in plasma increased steeply esp. at the higher doses of folic acid. During treatment with 15 mg/wk of folic acid, tHcy fell by a mean of 36%, tGSH increased by a mean of 34%, but tCys was unaffected. Increases in the dose of folic acid did not augment these responses. The maximal effect on tHcy seemed to be obtained already at the lowest given dose of folic acid (15 mg/wk). At that dose, the red blood cells approached folate satn., which may reflect the situation in other cells that participate in homocysteine metab. and explain why further increases in the dose of folic acid are not effective from a tHcy-lowering point of view.
CC 1-8 (Pharmacology)
ST **folic acid** aminothiol **hemodialysis**
IT Erythrocyte
(effects on **folate** distribution and aminothiol concns after treatment with different doses of **folic acid** in **hemodialysis** patients)
IT **Dialysis**
(**hemodialysis**; effects on **folate** distribution and aminothiol concns after treatment with different doses of **folic acid** in **hemodialysis** patients)
IT **59-30-3**, **Folic acid**, biological studies
RL: BAC (Biological activity or effector, except adverse); BPR (Biological

process); **THU (Therapeutic use)**; BIOL (Biological study); PROC (Process); USES (Uses)
(effects on **folate** distribution and aminothiol concns after treatment with different doses of **folic acid** in **hemodialysis** patients)

IT 52-90-4, Cysteine, biological studies 70-18-8, Glutathione, biological studies 6027-13-0, Homocysteine
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(effects on **folate** distribution and aminothiol concns after treatment with different doses of **folic acid** in **hemodialysis** patients)

REFERENCE COUNT: 28
REFERENCE(S):
(1) Andersson, A; Clin Chem 1993, V39, P1590 HCAPLUS
(6) Boushey, C; J Am Med Assoc 1995, V274, P1049 HCAPLUS
(7) Chauveau, P; Miner Electrolyte Metab 1996, V22, P106 HCAPLUS
(9) Dierkes, J; Clin Nephrol 1999, V51, P108 HCAPLUS
(10) Fodinger, M; Kidney Int 1997, V52, P517 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 7 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 2000:128254 HCAPLUS
DOCUMENT NUMBER: 132:151018
TITLE: A tale of two homocysteines-and two **hemodialysis** units
AUTHOR(S): Hoffer, L. John; Bank, Ilana; Hongsprabhas, Pranithi; Shrier, Ian; Saboohi, Farhad; Davidman, Michael; Bercovitch, David D.; Barre, Paul E.
CORPORATE SOURCE: Lady Davis Institute for Medical Research, Centre for Clinical Epidemiology and Community Studies, and Division of Nephrology, Sir Mortimer B. Davis-Jewish General Hospital, Montreal, PQ, H3T 1E2, Can.
SOURCE: Metab., Clin. Exp. (2000), 49(2), 215-219
CODEN: METAAJ; ISSN: 0026-0495
PUBLISHER: W. B. Saunders Co.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Pharmacol. doses of folic acid are commonly used to reduce the hyperhomocysteinemia of end-stage renal disease (ESRD). Vitamin B12 acts at the same metabolic locus as folic acid, but information is lacking about the specific effects of high doses of this vitamin on homocysteine levels in renal failure. We therefore compared the plasma homocysteine concns. of maintenance hemodialysis patients in two McGill University-affiliated urban tertiary-care medical centers that differed in the use of vitamin B12 and folic acid therapy. Patients in the first hemodialysis unit are routinely prescribed high-dose folic acid (HI-F, 6 mg/d), whereas those in the second unit receive high-dose vitamin B12 in the form of a monthly 1-mg i.v. injection, along with conventional oral folic acid (HI-B12, 1 mg/d). Predialysis homocysteine was 23.4 .+-. 6.8 .mu.mol/L (mean .+-. SD) in the HI-F unit and 18.2 .+-. 6.1 .mu.mol/L in the HI-B12 unit ($P < .002$). Postdialysis homocysteine was 14.5 .+-. 4.1 in the HI-F unit and 10.6 .+-. 3.4 .mu.mol/L in the HI-B12 unit ($P = .0001$). Multiple regression anal. indicated that high-dose parenteral vitamin B12 was assocd. with a lower homocysteine concn. even after

controlling for the potential confounders of sex, serum urea, serum creatinine, urea redn. ratio, and plasma cysteine. Because this was a cross-sectional observational study, we cannot exclude the possibility that unidentified factors, rather than the different vitamin therapies, account for the different homocysteine levels in the two units. Careful prospective studies of the homocysteine-lowering effect of high-dose parenteral vitamin B12 in ESRD should be undertaken.

CC 18-2 (Animal Nutrition)

ST hyperhomocysteinemia **vitamin B12 folic acid hemodialysis**

IT Vitamins
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(effect of **vitamin B12** and **folic acid** on homocysteine levels in **hemodialysis** patients with renal failure)

IT Kidney, disease
(failure; effect of **vitamin B12** and **folic acid** on homocysteine levels in **hemodialysis** patients with renal failure)

IT **Dialysis**
(**hemodialysis**; effect of **vitamin B12** and **folic acid** on homocysteine levels in **hemodialysis** patients with renal failure)

IT 6027-13-0, Homocysteine
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence);
BIOL (Biological study); OCCU (Occurrence)
(effect of **vitamin B12** and **folic acid** on homocysteine levels in **hemodialysis** patients with renal failure)

IT **59-30-3, Folic acid**, biological studies
68-19-9, **Vitamin B12**
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(effect of **vitamin B12** and **folic acid** on homocysteine levels in **hemodialysis** patients with renal failure)

IT 52-90-4, Cysteine, biological studies
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(effect of **vitamin B12** and **folic acid** on homocysteine levels in **hemodialysis** patients with renal failure)

REFERENCE COUNT: 44
REFERENCE(S):
(2) Bates, C; Eur J Clin Nutr 1997, V51, P691 HCAPLUS
(3) Bergmark, C; Clin Chem 1997, V43, P1997 HCAPLUS
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ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 8 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 2000:24631 HCAPLUS
DOCUMENT NUMBER: 132:63549

TITLE: Sustained reduction of hyperhomocysteinaemia with **folic acid** supplementation in predialysis patients
AUTHOR(S): Jungers, Paul; Joly, Dominique; Massy, Ziad; Chauveau, Philippe; Nguyen, Anh-Thu; Aupetit, Joelle; Chadefaux, Bernadette
CORPORATE SOURCE: Departments of Nephrology, Necker Hospital, Paris, F-75015, Fr.
SOURCE: Nephrol., Dial., Transplant. (1999), 14(12), 2903-2906
CODEN: NDTREA; ISSN: 0931-0509
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Moderate hyperhomocysteinemia, as occurs in chronic renal failure patients, is an established independent risk factor for atherosclerotic arterial occlusive accidents, the incidence of which is abnormally high in such patients. Folic acid supplementation has been shown to reduce plasma homocysteine level in end-stage renal disease patients treated with hemodialysis or peritoneal dialysis, but its long-term effects in predialysis patients had not been assessed. We prospectively treated a total of 78 predialysis patients with folic acid for at least 1 yr (range 12-74 mo) together with oral pyridoxine and vitamin B12 supplements. Of the patients, 67 received 5 mg folic acid three times per wk, whereas the other 11 patients who were treated with recombinant erythropoietin received 5 mg/day. Plasma fasting total homocysteine concn. was detd. at baseline, after 3 mo and at the end of follow-up. Mean (.+-. SD) plasma total homocysteine level decreased from 21.2 .+-. 6.4 .mu.mol/l at baseline to 14.2 .+-. 4.6 at 3 mo and remained at 12.8 .+-. 3.7 .mu.mol/l at the end of follow-up (av. duration 2.8 yr), whereas plasma creatinine rose from 268 .+-. 129 to 399 .+-. 234 .mu.mol/l. Mean plasma folate concn. rose from 19 .+-. 12 to 47 .+-. 13 nmol/l and mean plasma vitamin B12 rose from 237 .+-. 119 to 347 .+-. 191 pmol/l from baseline to end of follow-up. Moderate folic acid supplementation (2.15 mg/day) allows a substantial (40% as a mean) and sustained (up to 6 yr) redn. of plasma total homocysteine level in predialysis uremic patients without any detectable side effect. Folic acid supplementation may thus contribute to lower the risk of accelerated atherosclerosis in such patients.

CC 18-2 (Animal Nutrition)
ST **folic acid** hyperhomocysteinemia atherosclerosis kidney **dialysis**
IT Kidney, disease
(failure, chronic; sustained redn. of hyperhomocysteinemia with **folic acid** supplementation in human predialysis patients)
IT **Dialysis**
(**hemodialysis**; sustained redn. of hyperhomocysteinemia with **folic acid** supplementation in human predialysis patients)
IT Atherosclerosis
(sustained redn. of hyperhomocysteinemia with **folic acid** supplementation in human predialysis patients)

IT 6027-13-0, L-Homocysteine
RL: BOC (Biological occurrence); BPR (Biological process); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(hyperhomocysteinemia; sustained redn. of hyperhomocysteinemia with **folic acid** supplementation in human predialysis patients)
IT **59-30-3, Folic acid**, biological studies
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(sustained redn. of hyperhomocysteinemia with **folic acid** supplementation in human predialysis patients)
REFERENCE COUNT: 25
REFERENCE(S): (3) Bostom, A; Kidney Int 1996, V49, P147 HCAPLUS
(8) Chauveau, P; Miner Electrolyte Metab 1996, V22, P106 HCAPLUS
(12) Janssen, M; Miner Electrolyte Metab 1996, V22, P110 HCAPLUS
(13) Jungers, P; Miner Electrolyte Metab 1997, V23, P170 HCAPLUS
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ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 9 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 2000:24623 HCAPLUS
DOCUMENT NUMBER: 132:288171
TITLE: Reversal of hyperhomocyst(e)inemia in chronic renal failure-is folic or folinic acid the answer?
AUTHOR(S): Massy, Ziad A.
CORPORATE SOURCE: Division of Nephrology, Necker Hospital, Paris, F-75730, Fr.
SOURCE: Nephrol., Dial., Transplant. (1999), 14(12), 2810-2812
CODEN: NDTREA; ISSN: 0931-0509
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review, with 17 refs. The increased efficacy of folinic acid or methyltetrahydrofolic acid supplementation over folic acid supplementation in the treatment of hyperhomocyst(e)inemia in chronic renal patients is discussed.
CC 1-0 (Pharmacology)
Section cross-reference(s): 18
ST review hyperhomocysteinemia kidney failure **folate** folinate methyltetrahydrofolate
IT **Dialysis**
(**hemodialysis**; efficacy of supplementation with folinic or methyltetrahydrofolate acid in treatment of hyperhomocyst(e)inemia in humans with chronic renal failure)
IT 58-05-9, Folinic acid **59-30-3, Folic acid**, biological studies 134-35-0, 5-Methyltetrahydrofolic acid
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(efficacy of supplementation with folinic or methyltetrahydrofolate acid in treatment of hyperhomocyst(e)inemia in humans with chronic renal failure)
REFERENCE COUNT: 17

REFERENCE(S): (1) Bagley, P; Proc Natl Acad Sci 1998, V95, P13217 HCAPLUS
(2) Bailey, L; J Nutr 1999, V129, P779 HCAPLUS
(4) Bostom, A; Kidney Int 1996, V49, P147 HCAPLUS
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ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 10 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1999:642142 HCAPLUS
DOCUMENT NUMBER: 131:237903
TITLE: Intravenous methylcobalamin treatment for uremic and diabetic neuropathy in chronic **hemodialysis** patients
AUTHOR(S): Kuwabara, Satoshi; Nakazawa, Ryoichi; Azuma, Nakanobu; Suzuki, Mitsuru; Miyajima, Keiko; Fukutake, Toshio; Hattori, Takamichi
CORPORATE SOURCE: Department of Neurology, Chiba University School of Medicine, Chiba, 260-8670, Japan
SOURCE: Intern. Med. (Tokyo) (1999), 38(6), 472-475
CODEN: IEDIEP; ISSN: 0918-2918
PUBLISHER: Japanese Society of Internal Medicine
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Object: To study the effects of the i.v. administration of methylcobalamin, an analog of vitamin B12, for uremic or uremic-diabetic polyneuropathy in patients who are receiving maintenance hemodialysis. An ultra-high dose of vitamin B12 has been reported to promote peripheral nerve regeneration in exptl. neuropathy. Methods: Nine patients received a 500.mu.g methylcobalamin injection 3 times a week for 6 mo. The effects were evaluated using neuropathic pain grading and a nerve conduction study. Results: Serum concns. of vitamin B12 were ultra-high during treatment due to the lack of urinary excretion. After 6 mo of treatment, the patients' pain or paresthesia had lessened, and the ulnar motor and median sensory nerve conduction velocities showed significant improvement. There were no side effects. Conclusion: I.v. methycobalamin treatment is a safe and potentially beneficial therapy for neuropathy in chronic hemodialysis patients.
CC 1-11 (Pharmacology)
ST methylcobalamin diabetic neuropathy kidney failure **hemodialysis**
IT Nerve, disease
(diabetic neuropathy; i.v. methylcobalamin treatment for uremic and diabetic neuropathy in chronic **hemodialysis** humans)
IT Kidney, disease
(failure; i.v. methylcobalamin treatment for uremic and diabetic neuropathy in chronic **hemodialysis** humans)
IT **Dialysis**
(**hemodialysis**; i.v. methylcobalamin treatment for uremic and diabetic neuropathy in chronic **hemodialysis** humans)
IT Regeneration, animal
(nerve; i.v. methylcobalamin treatment for uremic and diabetic

neuropathy in chronic **hemodialysis** humans)
IT 13422-55-4, Methylcobalamin
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(i.v. methylcobalamin treatment for uremic and diabetic neuropathy in chronic **hemodialysis** humans)
IT 68-19-9, **Vitamin B12**
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(i.v. methylcobalamin treatment for uremic and diabetic neuropathy in chronic **hemodialysis** humans)
REFERENCE COUNT: 17
REFERENCE(S): (5) Cedar, H; Cell 1988, V53, P3 HCAPLUS
(11) Ogawa, T; Vitamins (Abstract in English) 1989, V63, P123 HCAPLUS
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(13) Seckel, B; Muscle Nerve 1990, V13, P785 HCAPLUS
(17) Watanabe, T; J Neurol Sci 1994, V122, P140 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 11 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1999:606007 HCAPLUS
DOCUMENT NUMBER: 131:223248
TITLE: Dose response studies on the effect of **folic acid** supplementation on the concentration of the atherogenic amino acid homocysteine in patients with ESRD
AUTHOR(S): Dierkes, J.; Domrore, U.; Ambrosch, A.; Kunz, D.; Neumann, K. H.; Luley, C.
CORPORATE SOURCE: Institut fur Klinische Chemie und Klinik fur Nephrologie, Universitatsklinik Magdeburg, Germany
SOURCE: Adv. Lipoprotein Atheroscler. Res., Diagn. Treat., Proc. Int. Dresden Lipid Symp., 9th (1998), Meeting Date 1997, 158-161. Editor(s): Hanefeld, Markolf. Fischer: Jena, Germany.
CODEN: 68EPAR
DOCUMENT TYPE: Conference
LANGUAGE: English
AB It was the aim of the present study to achieve homocysteine concns. within the normal range in patients with end-stage renal disease (ESRD) by folic acid supplementation. The dosage of folic acid used in this study was much lower than that used in other studies. In the present study, plasma homocysteine concns. within the normal range were only achieved in a minority of hemodialysis patients and in 50% of the peritoneal dialysis patients. This comparison shows that the loss of the metabolizing capacity of healthy kidneys is an important determinant of hyperhomocysteinemia in patients with ESRD. For this group of patients, folic acid alone is not an effective therapeutic regimen to normalize plasma homocysteine concns. Combinations of folic acid and vitamin B6 have been shown to be uneffective to reduce hyperhomocysteinemia in patients with ESRD. Another option may be the combination of folic acid and high dose vitamin B12.
CC 1-8 (Pharmacology)
ST **folate** homocysteine **hemodialysis** chronic renal failure

IT Kidney, disease
(failure, chronic, irreversible; dose response studies on effect of **folic acid** supplementation on concn. of atherogenic amino acid homocysteine in humans with end stage renal disease)
IT **Dialysis**
(**hemodialysis**; dose response studies on effect of **folic acid** supplementation on concn. of atherogenic amino acid homocysteine in humans with end stage renal disease)
IT **Dialysis**
(peritoneal; dose response studies on effect of **folic acid** supplementation on concn. of atherogenic amino acid homocysteine in humans with end stage renal disease)
IT **59-30-3, Folic acid**, biological studies
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(dose response studies on effect of **folic acid** supplementation on concn. of atherogenic amino acid homocysteine in humans with end stage renal disease)
IT 6027-13-0, L-Homocysteine
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(dose response studies on effect of **folic acid** supplementation on concn. of atherogenic amino acid homocysteine in humans with end stage renal disease)
REFERENCE COUNT: 6
REFERENCE(S): (1) Bostom, A; Kidney Int 1996, V49, P147 HCAPLUS
(3) Janssen, M; Miner Electrolyte Metab 1996, V22, P110 HCAPLUS
(4) Kluijtmans, L; Am J Hum Genet 1996, V58, P35 HCAPLUS
(5) Ubbink, J; J Nutr 1994, V124, P1927 HCAPLUS
(6) Vester, B; Eur J Clin Chem Clin Biochem 1991, V29, P549 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 12 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1999:573163 HCAPLUS
DOCUMENT NUMBER: 131:198934
TITLE: Cardiovascular morbidity and endothelial dysfunction in chronic **hemodialysis** patients: is homocyst(e)ine the missing link?
AUTHOR(S): Kunz, Kristian; Petitjean, Philippe; Lisri, Mohamed; Chantrel, Frances; Koehl, Christian; Wiesel, Marie-Louise; Cazenave, Jean-Pierre; Moulin, Bruno; Hannedouche, Thierry P.
CORPORATE SOURCE: Department of Nephrology, Hopitaux Universitaires de Strasbourg, Strasbourg, Fr.
SOURCE: Nephrol., Dial., Transplant. (1999), 14(8), 1934-1942
CODEN: NDTREA; ISSN: 0931-0509
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Hemodialysis patients exhibit an excessive burden of atherothrombotic disease, which is not explained adequately by traditional risk factors. Hyperhomocyst(e)inemia, a consistent finding in uremic patients, is now widely recognized as an independent risk factor for vascular disease. The

aim of this study was to examine the hypothesis that hyperhomocyst(e)inemia is assocd. with cardiovascular complications in dialyzed patients. In a cohort of 63 stable chronic hemodialysis patients, we examd. the causal relationship between hyperhomocyst(e)inemia and vascular endothelial and hemostatic function. All their markers were detd. before and after an 8-wk course of a 10 mg per day oral folate supplementation, a manoeuvre known to decrease hyperhomocyst(e)inemia in uremic patients. History of at least one cardiovascular atherothrombotic event was present in 47.6% of the hemodialyzed patients, and radiog. evidence of vascular calcifications in 70%. Hyperhomocyst(e)inemia was found in all patients, averaging 3.5-fold the upper limit of normal values (P<0.001), despite the lack of clin. and biol. evidence of malnutrition. Fibrinogen, von Willebrand factor and plasminogen activator inhibitor type 1, but not endothelin 1, were significantly higher in hemodialysis patients than in controls. After adjustment for all variables, past history of cardiovascular events was independently assocd. with higher levels of homocyst(e)inemia only (odds ratio (OR) 1.06; 95% confidence interval (CI) 1.01-1.12; P<0.026). The presence of aortic calcifications was independently and significantly assocd. with age (OR 1.37; 95% CI 1.07-1.75; P<0.025), homocyst(e)inemia (OR 1.14; 95% CI 1.02-1.27; P<0.05) and fibrinogen concn. only (OR 9.74; 95% CI 1.25-75.2; P<0.05). None of the endothelial-hemostatic factors was, however, related to homocyst(e)ine levels. Mid-term folate supplementation decreased plasma homocyst(e)ine levels significantly without achieving normal values. No significant change of endothelial-hemostatic markers was obsd., however, despite the drop in plasma homocyst(e)ine. Hyperhomocyst(e)inemia is assocd. with increased cardiovascular risk in hemodialysis patients. Folate supplementation was partially effective in lowering hyperhomocyst(e)inemia, but its usefulness in terms of redn. in cardiovascular morbidity and mortality remains to be detd. in prospective trials.

CC 18-3 (Animal Nutrition)
Section cross-reference(s): 1

ST homocysteine vascular endothelium dysfunction **hemodialysis**

IT Blood vessel
(endothelium; involvement of hyperhomocysteinemia in cardiovascular morbidity and endothelial dysfunction in humans on chronic **hemodialysis**)

IT Kidney, disease
(failure; involvement of hyperhomocysteinemia in cardiovascular morbidity and endothelial dysfunction in humans on chronic **hemodialysis**)

IT **Dialysis**
(**hemodialysis**; involvement of hyperhomocysteinemia in cardiovascular morbidity and endothelial dysfunction in humans on chronic **hemodialysis**)

IT Blood vessel, disease
(involvement of hyperhomocysteinemia in cardiovascular morbidity and endothelial dysfunction in humans on chronic **hemodialysis**)

IT **59-30-3, Folic acid**, biological studies
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)

(involvement of hyperhomocysteinemia in cardiovascular morbidity and endothelial dysfunction in humans on chronic **hemodialysis**)
IT 6027-13-0, Homocysteine
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(involvement of hyperhomocysteinemia in cardiovascular morbidity and endothelial dysfunction in humans on chronic **hemodialysis**)
REFERENCE COUNT: 47
REFERENCE(S): (1) Araki, A; Atherosclerosis 1989, V79, P139 HCAPLUS
(2) Bostom, A; Atherosclerosis 1995, V114, P93 HCAPLUS
(3) Bostom, A; Kidney Int 1996, V49, P147 HCAPLUS
(8) Dudman, N; Atherosclerosis 1991, V91, P77 HCAPLUS
(12) Green, L; Anal Biochem 1982, V126, P131 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 13 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1999:384635 HCAPLUS
DOCUMENT NUMBER: 131:44139
TITLE: Effects of high-dose **folic acid** and pyridoxine on plasma and erythrocyte sulfur amino acids in **hemodialysis** patients
AUTHOR(S): Suliman, Mohamed E.; Divino Filho, Jose C.; Barany, Peter; Anderstam, Bjorn; Lindholm, Bengt; Bergstrom, Jonas
CORPORATE SOURCE: Divs. Baxter Novum and Renal Med., Dep. Clinical Sci., Huddinge Univ. Hosp., Karolinska Inst., Stockholm, Swed.
SOURCE: J. Am. Soc. Nephrol. (1999), 10(6), 1287-1296
CODEN: JASNEU; ISSN: 1046-6673
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In this investigation, sulfur amino acids (sAA) and sulfhydryls were detd. in the plasma and erythrocytes (RBC) of 10 uremic patients on regular hemodialysis (HD) treatment and 10 healthy subjects, before and after supplementation with 15 mg/d of folic acid and 200 mg/d of pyridoxine for 4 wk. The basal total plasma concns. of homocysteine (Hcy), cysteine (Cys), cysteinyl glycine (Cys-Gly), .gamma.-glutamylcysteine (.gamma.-Glu-Cys), glutathione (GSH) and free cysteinesulfinic acid (CSA) were significantly higher in HD patients when compared to healthy subjects, whereas methionine (Met) and taurine (Tau) concns. were the same in the two groups. HD patients showed significantly higher RBC levels of Hcy and Cys-Gly, whereas the RBC concns. of Met, Cys, Tau, and GSH were not different from those in the healthy subjects. The plasma concns. of sAA and sulfhydryls differed compared with RBC levels in the healthy subjects and HD patients. In both groups, supplementation with high doses of folic acid and pyridoxine reduced the plasma Hcy concn. In addn., increased plasma concns. of Cys-/gly and GSH were found in the HD patients and CSA in the healthy subjects. After vitamin supplementation, the RBC concns. of Hcy, Cys, and GSH increased and that of Tau decreased in healthy subjects. The only significant finding in RBc of HD patients was an increase in GSH levels after supplementation. This study shows several

RBC and plasma sAA and sulfhydryl abnormalities in HD patients, which confirms earlier findings that RBC and plasma pools play independent roles in interorgan amino acid transport and metab. Moreover, high-dose supplementation with folic acid and pyridoxine significantly reduced Hcy levels, but did not restore the sAA and sulfhydryl abnormalities to normal levels. The increase that was obsd. in GSH after vitamin supplementation may have a beneficial effect in improving blood antioxidant status in uremic patients. Finally, the findings of elevated plasma Cys levels correlating to the elevated plasma Hcy levels in the presence of elevated plasma CSA levels, both before and after vitamin supplementation, led to the hypothesis that a block in decarboxylation of CSA is linked to hyperhomocysteinemia in end-stage renal failure.

CC 18-2 (Animal Nutrition)
Section cross-reference(s): 1

ST **folate** pyridoxine erythrocyte sulfur amino acid;
hemodialysis folate pyridoxine erythrocyte amino acid

IT **Dialysis**
(**hemodialysis**; high-dose **folic acid** and pyridoxine effects on plasma and erythrocyte sulfur amino acids in humans on **hemodialysis**)

IT Erythrocyte
(high-dose **folic acid** and pyridoxine effects on plasma and erythrocyte sulfur amino acids in humans on **hemodialysis**)

IT Amino acids, biological studies
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(sulfur-contg.; high-dose **folic acid** and pyridoxine effects on plasma and erythrocyte sulfur amino acids in humans on **hemodialysis**)

IT **59-30-3**, **Folic acid**, biological studies
65-23-6, Pyridoxine
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(high-dose **folic acid** and pyridoxine effects on plasma and erythrocyte sulfur amino acids in humans on **hemodialysis**)

IT 52-90-4, Cysteine, biological studies 63-68-3, L-Methionine, biological studies 70-18-8, Glutathione, biological studies 107-35-7, Taurine 636-58-8, .gamma.-Glutamylcysteine 2381-08-0, Cysteinesulfinic acid 6027-13-0, L-Homocysteine 19246-18-5, Cysteinyl glycine
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(high-dose **folic acid** and pyridoxine effects on plasma and erythrocyte sulfur amino acids in humans on **hemodialysis**)

REFERENCE COUNT: 56
REFERENCE(S):
(2) Barber, J; J Biol Chem 1984, V259, P7115 HCAPLUS
(4) Beutler, E; Annu Rev Nutr 1989, V9, P287 HCAPLUS
(5) Bostom, A; Atherosclerosis 1995, V114, P93 HCAPLUS
(6) Bostom, A; Kidney Int 1996, V49, P147 HCAPLUS
(10) Butterworth, C; Am J Clin Nutr 1989, V50, P353 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 14 OF 33 HCAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1999:297294 HCAPLUS
DOCUMENT NUMBER: 130:342992
TITLE: Novel pharmaceutical .alpha.-keto carboxylic acid compositions, method of making and use thereof
INVENTOR(S): Bunger, Rolf
PATENT ASSIGNEE(S): United States Dept. of the Army, USA
SOURCE: PCT Int. Appl., 77 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9921544	A1	19990506	WO 1998-US16141	19980803
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9887663	A1	19990517	AU 1998-87663	19980803
PRIORITY APPLN. INFO.:			US 1997-999767	19971027
			WO 1998-US16141	19980803

OTHER SOURCE(S): MARPAT 130:342992

AB Disclosed are a pharmaceutical compn. comprising an .alpha.-keto carboxylic acid or a pharmaceutically-acceptable salt thereof as an active phosphorylation potential enhancing substance, its use and products contg. the same. For example, an injectable antibiotic augmented with a pyruvate contained ceftriaxone sodium 250 mg, water 0.9 mL, and Na pyruvate 0.5 mg.

IC ICM A61K031-19
ICS A61K031-20
CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 1, 18, 62
IT Vitamins
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(co-administration with; use of .alpha.-keto carboxylic acid compns. as phosphorylation potential enhancing agents)
IT Carboxylic acids, biological studies
RL: BAC (Biological activity or effector, except adverse); BUU (Biological use, unclassified); FFD (Food or feed use); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(oxo, salts; use of .alpha.-keto carboxylic acid compns. as phosphorylation potential enhancing agents)
IT **Hemodialysis**
Peritoneal **dialysis**
(solns.; use of .alpha.-keto carboxylic acid compns. as phosphorylation

potential enhancing agents)
IT Antiasthmatics
Blood substitutes
Dialysis fluids
Electrolytes
Intramuscular injections
Phosphorylation (biological)
Physiological saline solutions
Sprays (drug delivery systems)
Tissue culture (animal)
Topical drug delivery systems
Total parenteral nutrition
(use of .alpha.-keto carboxylic acid compns. as phosphorylation potential enhancing agents)
IT 51-30-9, Isoproterenol hydrochloride 55-31-2, Epinephrine hydrochloride 59-43-8, **Thiamine**, biological studies 74578-69-1, Ceftriaxone sodium
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(co-administration with; use of .alpha.-keto carboxylic acid compns. as
phosphorylation potential enhancing agents)
IT 113-24-6, Sodium pyruvate
RL: BAC (Biological activity or effector, except adverse); BUU (Biological
use, unclassified); FFD (Food or feed use); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(use of .alpha.-keto carboxylic acid compns. as phosphorylation potential enhancing agents)
REFERENCE COUNT: 4
REFERENCE(S): (1) Barratt; US 4507319 A 1985
(2) Bowser; US 4824865 A 1989
(3) Bunger; Eur J Biochem 1989, V180, P221 HCAPLUS
(4) Yu; US 5091171 A 1992

L22 ANSWER 15 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1999:168745 HCAPLUS
DOCUMENT NUMBER: 130:266685
TITLE: Effect of **folic acid** and betaine on fasting and postmethionine-loading plasma homocysteine and methionine levels in chronic **hemodialysis** patients
AUTHOR(S): Van Guldener, C.; Janssen, M. J. F. M.; De Meer, K.; Donker, A. J. M.; Stehouwer, C. D. A.
CORPORATE SOURCE: Department of Nephrology, Academic Hospital and Institute for Cardiovascular Research, Vrije Universiteit, Amsterdam, Neth.
SOURCE: J. Intern. Med. (1999), 245(2), 175-183
CODEN: JINMEO; ISSN: 0954-6820
PUBLISHER: Blackwell Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To study fasting and postmethionine-loading (increment and decrement) plasma homocysteine levels in end-stage renal disease (ESRD) patients in relation to B-vitamin status and after folic acid treatment without or with betaine. Plasma total homocysteine (tHcy) and methionine levels were

measured in chronic hemodialysis patients after an overnight fast, and 6 and 24 h after an oral methionine load (0.1 g kg-1). The patients were subsequently randomized to treatment with folic acid 5 mg daily with or without betaine 4 g daily, and the loading test was repeated after 12 wk. The patients were then re-randomized to treatment with 1 or 5 mg folic acid daily for 40 wk, after which a third loading test was performed. Haemodialysis unit of university hospital and center for hemodialysis. Twenty-nine consecutive maintenance (> 3 mo) hemodialysis patients, not on folic acid supplementation, 26 of whom completed the study. At baseline, the mean fasting, the 6 h post-load and the 6 h postload increment plasma tHcy levels were increased as compared with those in healthy controls (46.8 .+-. 6.9 (SEM), 92.8 .+-. 9.1 and 46.0 .+-. 4.2 .mu.mol L-1, resp.) and correlated with serum folate (r = -0.42, P = 0.02; r = -0.61, P = 0.001 and r = -0.54, P = 0.003, resp.), but not with vitamin B6 or vitamin B12. At week 12, these variables had all decreased significantly. Betaine did not have addnl. homocysteine-lowering effects. At week 52, fasting and postload tHcy levels did not differ significantly between patients on 1 or 5 mg folic acid daily. Plasma tHcy half-life and plasma methionine levels after methionine loading were not altered by folic acid treatment. In chronic hemodialysis patients, fasting as well as postmethionine-loading plasma tHcy levels depend on folate status and decrease after folic acid therapy. Increased postload homocysteine levels in these patients therefore do not necessarily indicate an impaired transsulphuration capacity only; alternatively, folate may indirectly influence transsulphuration. The elucidation of the complex pathogenesis of hyperhomocysteinemia in chronic renal failure requires further investigation.

CC 18-2 (Animal Nutrition)
Section cross-reference(s): 1

ST **folate** betaine homocysteine methionine **hemodialysis**

IT **Hemodialysis**
(effect of **folic acid** and betaine on fasting and postmethionine-loading plasma homocysteine and methionine levels in chronic **hemodialysis** humans)

IT **59-30-3, Folic acid**, biological studies
107-43-7, Betaine
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(effect of **folic acid** and betaine on fasting and postmethionine-loading plasma homocysteine and methionine levels in chronic **hemodialysis** humans)

IT 63-68-3, Methionine, biological studies 6027-13-0, Homocysteine
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(effect of **folic acid** and betaine on fasting and postmethionine-loading plasma homocysteine and methionine levels in chronic **hemodialysis** humans)

REFERENCE COUNT: 28
REFERENCE(S):
(1) Arnadottir, M; Scan J Clin Lab Invest 1996, V56, P41 HCAPLUS
(3) Bostom, A; Atherosclerosis 1995, V114, P93 HCAPLUS
(4) Bostom, A; Atherosclerosis 1996, V123, P193

HCAPLUS
(7) Frosst, P; Nat Genet 1995, V10, P111 HCAPLUS
(9) Guttormsen, A; Am J Clin Nutr 1996, V63, P194 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 16 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1999:126828 HCAPLUS
DOCUMENT NUMBER: 130:158436
TITLE: **Dialysis** solutions containing water soluble vitamins and nutrients
INVENTOR(S): Gupta, Ajay
PATENT ASSIGNEE(S): USA
SOURCE: PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9907419	A1	19990218	WO 1998-US16383	19980806
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9888988	A1	19990301	AU 1998-88988	19980806
EP 1009452	A1	20000621	EP 1998-940797	19980806
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRIORITY APPLN. INFO.:			US 1997-55015	19970807
			WO 1998-US16383	19980806

AB Methods and compns. for the prevention and treatment of vitamin and other nutrient deficiencies in hemodialysis and peritoneal dialysis patients are disclosed. Patients are dialyzed with a dialyzate soln. comprising at least one vitamin. A vitamin conc. soln. contained thiamine HCl 65.06, folic acid 26.024, ascorbic acid 26.024, and pyridoxine HCl 26.024 mg. A 250 mL vitamin conc. soln. was added to 25 gal of bicarbonate conc. for hemodialysis to make a vitamin plus bicarbonate conc. One part of the vitamin plus bicarbonate conc. was dild. with 27.5 parts of acid conc. and water to prep. the dialyzate soln. Hemodialysis was performed on a plasma obtained from a uremic subject. The plasma pyridoxal 5-phosphate concn. decreased form 5.2 .mu.g/L to 3.1-3.7 .mu.g/L after 90 min of dialysis.
IC ICM A61M001-14
ICS A61M001-28; A61K031-00; A61K031-44; A61K031-51; A61K031-68
CC 63-6 (Pharmaceuticals)
ST **dialysis** soln vitamin nutrient
IT **Dialysis**
Hemodialysis

Nutrients
Peritoneal **dialysis**
(**dialysis** solns. contg. water sol. vitamins and nutrients)
IT Vitamins
RL: BAC (Biological activity or effector, except adverse); **THU** (**Therapeutic use**); BIOL (Biological study); USES (Uses)
(**dialysis** solns. contg. water sol. vitamins and nutrients)
IT 50-81-7, Vitamin c, biological studies 58-56-0, Pyridoxine hydrochloride
59-30-3, **Folic acid**, biological studies
59-43-8, **Thiamine**, biological studies 68-19-9, **Vitamin b12** 541-15-1, Carnitine 8059-24-3, **Vitamin b6**
RL: BAC (Biological activity or effector, except adverse); **THU** (**Therapeutic use**); BIOL (Biological study); USES (Uses)
(**dialysis** solns. contg. water sol. vitamins and nutrients)
REFERENCE COUNT: 4
REFERENCE(S):
(1) Anon; Physicians' Desk Reference 1996, P1319
(2) Bostom; Kidney International 1996, V49, P147 HCAPLUS
(3) Kasama; American Journal of Kidney Diseases 1996, V27, P680 MEDLINE
(4) Mulchandani; US 5108767 A 1992

L22 ANSWER 17 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1999:93953 HCAPLUS
DOCUMENT NUMBER: 130:251627
TITLE: Effect of multivitamins on plasma homocysteine and **folate** levels in patients on **hemodialysis**
AUTHOR(S): House, Andrew A.; Donnelly, James G.
CORPORATE SOURCE: Division of Nephrology, Department of Medicine, Ottawa General Hospital, Ottawa, ON, Can.
SOURCE: ASAIO J. (1999), 45(1), 94-97
CODEN: AJOUET; ISSN: 1058-2916
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Hyperhomocysteinemia is a risk factor for cardiovascular disease in patients on hemodialysis. Causes include genetic enzyme deficiencies, chronic renal failure, and vitamin deficiencies. Homocysteine correlates neg. with folate status. In patients on hemodialysis, supraphysiol. doses of B vitamins and folate reduce homocysteine by 26-33%. No study has examd. the effect of a std. multivitamin (Nephro-Vite Rx), contg. B vitamins and 1 mg of folate, on erythrocyte-folate (RBC-folate) and homocysteine in patients on dialysis. We examd. RBC-folate and homocysteine levels in 11 stable chronic patients on hemodialysis, mean duration of dialysis 9.8.+-.4.1 mo, who were not on vitamin or folate supplements, and repeated these levels after 3 wk of once daily Nephro-Vite Rx dosage. Plasma homocysteine levels fell by 23.7% from 27.8.+-.5.9 to 21.2.+-.6.6 .mu.mol/L (p = 0.007), whereas RBC-folate levels rose 60% from 631.2.+-.208.3 to 1007.5.+-.423.7 nmol/L (p = 0.001).
The optimum dose of B vitamins and folate remains to be established, and a

clin. benefit from lowering homocysteine has not yet been demonstrated. In summary, a std. multivitamin such as Nephro-Vite Rx reduces plasma homocysteine levels and increases RBC-folate levels in patients on hemodialysis. Our results may have implications for the modification of cardiovascular risk in these patients.

CC 18-2 (Animal Nutrition)

ST multivitamin blood homocysteine **folate hemodialysis**

IT **Hemodialysis**
(multivitamins effect on plasma homocysteine and **folate** levels in humans on **hemodialysis**)

IT Vitamins
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(multivitamins effect on plasma homocysteine and **folate** levels in humans on **hemodialysis**)

IT **59-30-3**, **Folic acid**, biological studies
6027-13-0, L-Homocysteine
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(multivitamins effect on plasma homocysteine and **folate** levels in humans on **hemodialysis**)

REFERENCE COUNT: 20
REFERENCE(S): (5) Bostom, A; Atherosclerosis 1995, V114, P93 HCAPLUS
(6) Bostom, A; Atherosclerosis 1996, V123, P193 HCAPLUS
(7) Bostom, A; Atherosclerosis 1996, V125, P91 HCAPLUS
(8) Bostom, A; Kidney Int 1996, V49, P147 HCAPLUS
(10) Boushey, C; JAMA 1995, V274, P1049 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 18 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1998:774505 HCAPLUS
DOCUMENT NUMBER: 130:43281
TITLE: Intramembrane diffusion coefficient and rejection factor of asymmetric **dialysis** membrane and their changes due to fouling
AUTHOR(S): Kokubo, Kenichi; Sunohara, Takashi; Takewaki, Kohji; Sakai, Kiyotaka
CORPORATE SOURCE: Dep. Chem. Eng., Waseda Univ., Tokyo, 169-8555, Japan
SOURCE: Maku (1998), 23(6), 327-333
CODEN: MAKUD9; ISSN: 0385-1036
PUBLISHER: Nippon Maku Gakkai
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB One of the factors to reduce the performance of a hemodialyzer during clin. treatment is membrane fouling caused by protein adsorption. Highly permeable dialysis membranes recently developed are of asym. structure and the redn. in permeability after protein adsorption may vary with their asym. structure. Intramembrane diffusion coeffs. and rejection factor for several solutes of polysulfone membranes having asym. structure were measured before and after plasma protein adsorption. Ratio of intramembrane diffusion coeff. to diffusion coeff. in water for higher mol. wt. solutes is reduced after plasma protein adsorption, but that for

lower mol. wt. solutes is slightly reduced. Rejection factor after plasma protein adsorption increases at lower filtration flux esp. for smaller mols., but that at higher filtration flux hardly changes.

CC 63-7 (Pharmaceuticals)

ST asym **hemodialysis** membrane performance protein adsorption; fouling asym **hemodialysis** membrane diffusion coeff; solute rejection fouling asym hemodialyzer membrane; hollow fiber hemodialyzer membrane performance fouling

IT Membranes (nonbiological)
(asym.; intramembrane diffusion coeff. and rejection factor of asym. **dialysis** membrane and their changes due to fouling)

IT Polysulfones, biological studies
RL: PRP (Properties); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(fiber; intramembrane diffusion coeff. and rejection factor of asym. **dialysis** membrane and their changes due to fouling)

IT **Hemodialysis** membranes
(hollow-fiber; intramembrane diffusion coeff. and rejection factor of asym. **dialysis** membrane and their changes due to fouling)

IT Diffusion
Fouling
Protein adsorption
(intramembrane diffusion coeff. and rejection factor of asym. **dialysis** membrane and their changes due to fouling)

IT Blood proteins
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(intramembrane diffusion coeff. and rejection factor of asym. **dialysis** membrane and their changes due to fouling)

IT Synthetic polymeric fibers, biological studies
RL: PRP (Properties); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(polysulfones; intramembrane diffusion coeff. and rejection factor of asym. **dialysis** membrane and their changes due to fouling)

IT 62-56-6, Thiourea, biological studies 68-19-9, **Vitamin B12** 73-22-3, Tryptophan, biological studies 83-88-5, Riboflavin, biological studies 9004-54-0, Dextran, biological studies 9007-43-6, Cytochrome C, biological studies
RL: BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process)
(intramembrane diffusion coeff. and rejection factor of asym. **dialysis** membrane and their changes due to fouling)

L22 ANSWER 19 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1998:752291 HCAPLUS
DOCUMENT NUMBER: 130:10609
TITLE: Diagnosis and management of infection caused by Chlamydia
INVENTOR(S): Mitchell, William M.; Stratton, Charles W.
PATENT ASSIGNEE(S): Vanderbilt University, USA
SOURCE: PCT Int. Appl., 139 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9850074	A2	19981112	WO 1998-US9237	19980506
WO 9850074	A3	19990819		
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9872899	A1	19981127	AU 1998-72899	19980506
EP 981372	A2	20000301	EP 1998-920292	19980506
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRIORITY APPLN. INFO.:			US 1997-45689	19970506
			US 1997-45739	19970506
			US 1997-45779	19970506
			US 1997-45780	19970506
			US 1997-45784	19970506
			US 1997-45787	19970506
			US 1997-911593	19970814
			US 1998-25176	19980218
			US 1998-25521	19980218
			US 1998-25174	19980218
			WO 1998-US9237	19980506

AB A combination of agents directed toward various stages of the chlamydial life cycle is effective in substantially reducing infection. These include agents targeted against the cryptic phase (e.g. nitroarom. compds.), elementary body phase (e.g. disulfide reducing agents), and replicating phase, probenecid, and antiporphyric agents. Chlamydia-free cell lines and animals can be obtained, and Chlamydia infections can be treated, by use of .gtoreq.2 such agents. Chlamydia infections may be diagnosed or monitored by immunoassays (e.g. ELISA or antigen capture assay) for the cysteine-rich major outer membrane protein or for specific antigenic peptides, DNA amplification assays (e.g. PCR) for chlamydial genes, and Western blot assays. Thus, a multiple sclerosis patient showing progressive limb impairment was diagnosed with C. pneumoniae infection by cerebrospinal fluid PCR and culture; treatment with rifampin (300 mg twice a day for 2 mo against the elementary body/reticulate body transition), flagyl (500 mg twice a day for 5 mo against the stationary phase reticulate body), and ofloxacin (for 2 mo) and Bactrim (double strength twice a day) and levaquin (500 mg/day) for 5 mo against the replicating reticulate body resulted in marked improvement in all aspects of neurol. function and an ability to return to work and routine athletic activities.

IC A61K045-00

CC 1-5 (Pharmacology)
Section cross-reference(s): 9

IT Antibiotics
Antimicrobial agents
Bioassay
Biological materials
Chlamydia
Chlamydia pneumoniae

Chlamydia psittaci
Chlamydia trachomatis
DNA amplification (method)
Dietary food
Drug targeting
ELISA (immunosorbent assay)
Filtration
Genetic diagnosis
Hemodialysis
Immunity
Immunoassay
Immunodiagnosis
Nucleic acid amplification (method)
Nutrients
PCR (polymerase chain reaction)
Plasmapheresis
RT-PCR (reverse transcription-polymerase chain reaction)
(diagnosis and management of infection caused by Chlamydia)

IT Nitroaromatic compounds
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(diagnosis and management of infection caused by Chlamydia)

IT Carbohydrates, biological studies
RL: **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(dietary; diagnosis and management of infection caused by Chlamydia)

IT Vitamins
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(for porphyria treatment; diagnosis and management of infection caused by Chlamydia)

IT Activated charcoal
RL: **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(for porphyria treatment; diagnosis and management of infection caused by Chlamydia)

IT Radicals, biological studies
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(generation of, Chlamydia response to; diagnosis and management of infection caused by Chlamydia)

IT Disulfides
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(reducing agents; diagnosis and management of infection caused by Chlamydia)

IT Monoclonal antibodies
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(to porphyrins or **vitamin B12**; diagnosis and management of infection caused by Chlamydia)

IT 68-19-9, **Vitamin B12**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(antibodies to, detn. of; diagnosis and management of infection caused by Chlamydia)

IT 54-85-3, Isoniazid 57-66-9, Probenecid 443-48-1, Metronidazole 564-25-0, Doxycycline 10118-90-8, Minocycline 12001-76-2, Vitamin B 13292-46-1, Rifampin 15489-90-4, Hematin 26787-78-0, Amoxicillin 51481-61-9 81103-11-9, Clarithromycin 82419-36-1, Ofloxacin 83905-01-5, Zithromax

RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(diagnosis and management of infection caused by Chlamydia)

IT 118-42-3, Hydroxychloroquine
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(for porphyria treatment; diagnosis and management of infection caused by Chlamydia)

IT **59-30-3, Folic acid**, biological studies
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(metab. of, by Chlamydia, antimicrobial drugs effect on; diagnosis and management of infection caused by Chlamydia)

IT 52-67-5, Penicillamine
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(reducing agent, Chlamydia elementary body inactivation by; diagnosis and management of infection caused by Chlamydia)

L22 ANSWER 20 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1998:749174 HCAPLUS
DOCUMENT NUMBER: 130:167549
TITLE: **Folate** supplementation in the **dialysis** patient-fragmentary evidence and tentative recommendations
AUTHOR(S): Westhuyzen, Justin
CORPORATE SOURCE: Conjoint Renal Laboratory, Division of Chemical Pathology, Royal Brisbane Hospital, Brisbane, Australia
SOURCE: Nephrol., Dial., Transplant. (1998), 13(11), 2748-2750
CODEN: NDTREA; ISSN: 0931-0509
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with 22 refs. This article reviews the role of folate in hematopoiesis, importance of folate metab. in homocysteine recycling and relation to atherosclerotic risk, the risks assocd. with folate therapy, and recommendations for therapeutic use.

CC 18-0 (Animal Nutrition)
Section cross-reference(s): 1

ST review **folate** supplement **dialysis** atherosclerosis homocysteine

IT Atherosclerosis
Dialysis
(**folate** supplementation to reduce atherosclerotic risk in humans on **dialysis**)

IT **59-30-3, Folic acid**, biological studies
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BPR (Biological process); **THU (Therapeutic use)**; BIOL (Biological study); PROC (Process); USES (Uses)
(**folate** supplementation to reduce atherosclerotic risk in humans on **dialysis**)

IT 6027-13-0, L-Homocysteine
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(**folate** supplementation to reduce atherosclerotic risk in humans on **dialysis**)

REFERENCE COUNT: 22

REFERENCE(S):
(3) Bostom, A; Atherosclerosis 1996, V123, P193 HCAPLUS
(4) Bostom, A; Kidney Int 1996, V49, P147 HCAPLUS
(5) Butterworth, C; Am J Clin Nutr 1989, V50, P353 HCAPLUS
(8) Chauveau, P; Miner Electrolyte Metab 1996, V22, P106 HCAPLUS
(12) Hunter, R; Lancet 1970, Vi, P61 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 21 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1998:492374 HCAPLUS
DOCUMENT NUMBER: 129:265442
TITLE: Protein-membrane interactions during **hemodialysis**: effects on solute transport
AUTHOR(S): Morti, Stavroula M.; Zydney, Andrew L.
CORPORATE SOURCE: Department of Chemical Engineering, University of Delaware, Newark, DE, 19716, USA
SOURCE: ASAIO J. (1998), 44(4), 319-326
CODEN: AJOUET; ISSN: 1058-2916
PUBLISHER: Lippincott-Raven Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Although several previous studies have shown that plasma protein adsorption can reduce solute clearance during hemodialysis, there is currently no quant. understanding of the factors that govern the extent of these protein-membrane interactions. In this study, quant. data were obtained for the clearance of urea, vitamin B12, and polydisperse dextrans using polyacrylonitrile (AN69) and cellulose triacetate dialyzers before and after exposure to human plasma in a simulated dialysis session. Contact with plasma had little effect on clearance of urea and vitamin B12, but caused more than an order of magnitude redn. in clearance for solutes with mol. wts. >10,000. These data were analyzed using a two layer model in which contact with plasma was assumed to cause a thin protein layer to form on the surface of the membrane. The protein layer had an effective pore size of .apprxeq.12.ANG., and was .apprxeq.1 .mu.m thick, as detd. by a hydrodynamic anal. of the clearance data, and from independent ests. based on changes in fiber bundle vol. and ultrafiltration coeff. The thickness of the protein layer increased with increasing dialysis time, ranging from 0.25 .mu.m after 40 min to 0.86 .mu.m after 180 min. These results provide important insights into the effects of contact with plasma on solute clearance during hemodialysis.
CC 63-8 (Pharmaceuticals)
IT Proteins (general), properties
RL: PRP (Properties)
(adsorption of; protein-membrane interactions during **hemodialysis** effect on solute transport)
IT Dialyzer membranes
Transport (biological)
(protein-membrane interactions during **hemodialysis** effect on solute transport)
IT 57-13-6, Urea, biological studies
RL: ADV (Adverse effect, including toxicity); PEP (Physical, engineering or chemical process); REM (Removal or disposal); BIOL (Biological study); PROC (Process)

(protein-membrane interactions during **hemodialysis** effect on solute transport)

IT 9012-09-3, Cellulose triacetate 30110-91-9, An69
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); **THU (Therapeutic use)**; BIOL (Biological study); PROC (Process); USES (Uses)
(protein-membrane interactions during **hemodialysis** effect on solute transport)

IT 68-19-9, **Vitamin B12** 9004-54-0, Dextran, processes
RL: PEP (Physical, engineering or chemical process); REM (Removal or disposal); PROC (Process)
(protein-membrane interactions during **hemodialysis** effect on solute transport)

L22 ANSWER 22 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1998:87873 HCAPLUS
DOCUMENT NUMBER: 128:216716
TITLE: No change in impaired endothelial function after long-term **folic acid** **therapy** of hyperhomocysteinemia in **hemodialysis** patients
AUTHOR(S): van Guldener, Coen; Janssen, Marrien J. F. M.; Lambert, Jan; ter Wee, Piet M.; Jakobs, Cornelis; Donker, Ab J. M.; Stehouwer, Coen D. A.
CORPORATE SOURCE: Departments of Internal Medicine, Nephrology; and Clinical Chemistry and Paediatrics, University Hospital and Institute for Cardiovascular Research, Vrije Universiteit, Amsterdam, Neth.
SOURCE: Nephrol., Dial., Transplant. (1998), 13(1), 106-112
CODEN: NDTREA; ISSN: 0931-0509
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Hyperhomocysteinemia is frequent in chronic hemodialysis patients. Because of its potential role in athero- and thrombogenesis, the effects of long-term homocysteine-lowering treatment on endothelial function are of interest. We conducted a randomized, controlled trial in 35 hemodialysis patients. In phase 1, patients were treated with 5 mg folic acid or 5 mg folic acid and 4 g betaine per day for 12 wk, and in phase 2 with 1 or 5 mg folic acid daily for 40 wk. In phase 3, all patients received 15 mg folic acid daily for four weeks. Endothelial function was assessed before and after 52 wk of treatment by detn. of flow-mediated vasodilatation of the brachial artery, and by measuring plasma levels of endothelium-derived proteins. Non-fasting predialysis plasma total homocysteine was markedly elevated at baseline (46.9 .+-. 6.3 gmol/L) and decreased rapidly after initiation of therapy. Significant differences in plasma homocysteine between the groups were found neither during phase 1 nor phase 2. Plasma total homocysteine had normalized in only two out of 30 patients at the end of phase 2. Increasing the daily folic acid dose to 15 mg did not further reduce plasma total homocysteine. Endothelial function parameters did not improve. We concluded that betaine is not effective in conjunction with folic acid in the treatment of hyperhomocysteinemia in hemodialysis patients. Normalization of plasma total homocysteine is seldom achieved with 1, 5 or 15 mg folic acid daily, which may explain why long-term homocysteine-lowering treatment with 1 or

5 mg folic acid does not ameliorate endothelial function.
CC 18-2 (Animal Nutrition)
Section cross-reference(s): 1
ST endothelium vascular **folic acid** hyperhomocysteinemia **hemodialysis**
IT Vascular endothelium
(vascular; **folic acid** effects on impaired endothelium in humans with hyperhomocysteinemia on **hemodialysis**)
IT **59-30-3**, **Folic acid**, biological studies
107-43-7, Betaine
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(**folic acid** effects on impaired endothelium in humans with hyperhomocysteinemia on **hemodialysis**)
IT 6027-13-0, Homocysteine
RL: BOC (Biological occurrence); BPR (Biological process); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(**folic acid** effects on impaired endothelium in humans with hyperhomocysteinemia on **hemodialysis**)

L22 ANSWER 23 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1998:47459 HCAPLUS
DOCUMENT NUMBER: 128:145278
TITLE: Size of polymeric particles forming **hemodialysis** membranes determined from water and solute permeabilities
AUTHOR(S): Kanamori, Toshiyuki; Shinbo, Toshio; Sakai, Kiyotaka
CORPORATE SOURCE: Department of Polymer Engineering, National Institute of Materials and Chemical Research, Tsukuba, 305, Japan
SOURCE: J. Appl. Polym. Sci. (1998), 67(5), 833-840
CODEN: JAPNAB; ISSN: 0021-8995
PUBLISHER: John Wiley & Sons, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Regarding hemodialysis membranes as layers packed with uniform polymeric particles, the size of the particles is detd. using the Kozeny-Carman equation. Diam. of the spheres forming cellulosic membranes is the same order as the size of primary polymeric particles detd. by electron microscopy in a previous article. Pore radii of the membranes calcd. by the Kozeny-Carman equation are in agreement with those detd. by the tortuous capillary pore model. An est. of a pore radius of a membrane is feasible by the Kozeny-Carman equation only with water permeability of the membrane. Intramembrane diffusion coeffs. of vitamin B12 calcd. from an equation derived from the analogy of heat conduction in heterogeneous media consisting of a continuous phase and particles are larger than the exptl. values. The result suggests the failure of the analogy between heat conduction and diffusion of vitamin B12 in a heterogeneous medium.
CC 63-7 (Pharmaceuticals)
ST polymer particle **hemodialysis** membrane solute permeability
IT Polyethers, biological studies
RL: DEV (Device component use); POF (Polymer in formulation); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(blends; size of polymeric particles forming **hemodialysis** membranes detd. from solute permeabilities)

IT Membranes (nonbiological)
(cellophane; size of polymeric particles forming **hemodialysis** membranes detd. from solute permeabilities)
IT Cellophane
Hemodialyzers
(membranes; size of polymeric particles forming **hemodialysis** membranes detd. from solute permeabilities)
IT Diffusion
Particle size distribution
Permeability
Permeation (biological)
(size of polymeric particles forming **hemodialysis** membranes detd. from solute permeabilities)
IT Polysulfones, biological studies
Rayon, biological studies
RL: DEV (Device component use); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(size of polymeric particles forming **hemodialysis** membranes detd. from solute permeabilities)
IT 68-19-9, **Vitamin B12**
RL: BPR (Biological process); **THU (Therapeutic use)**; BIOL (Biological study); PROC (Process); USES (Uses)
(size of polymeric particles forming **hemodialysis** membranes detd. from solute permeabilities)
IT 9011-14-7, PMMA 9012-09-3, Cellulose triacetate 25014-41-9, Polyacrylonitrile 106254-94-8, Hemophan
RL: DEV (Device component use); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(size of polymeric particles forming **hemodialysis** membranes detd. from solute permeabilities)

L22 ANSWER 24 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1997:718553 HCAPLUS
DOCUMENT NUMBER: 127:344922
TITLE: Comparison of the **thiamine** level in blood and erythrocyte transketolase activity in hemodialyzed and nondialyzed patients during recombinant human erythropoietin **therapy**
AUTHOR(S): Pietrzak, Irena; Baczyk, Kazimierz
CORPORATE SOURCE: Department Nephrology, University Medical Sciences, Poznan, 60355, Pol.
SOURCE: Miner. Electrolyte Metab. (1997), 23(3-6), 277-282
CODEN: MELMDI; ISSN: 0378-0392
PUBLISHER: Karger
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Thiamine and erythrocyte transketolase activity (ETKA) disturbances in end-stage renal disease are caused mainly by uremia and dialysis treatment. The authors examd. whether recombinant human erythropoietin (rhEPO) can correct these abnormalities in uremic patients. 13 Hemodialysis (HD) and 12 nondialyzed (ND) anemic patients showed decreased free and total thiamine levels in plasma and in erythrocytes and decreased ETKA when compared to 20 healthy subjects. Thiamine blood levels (.mu.mol/L) were detd. using a fluorimetric technique, and ETKA (.mu.mol/L

per min) was assessed with a photocolorimetric method. Over 20 wk of study, rhEPO was given i.v. for 8 wk at 50 Ul/kg body wt. (BW) three times a week, and s.c. for 4 wk at 25 Ul/kg BW, twice a week, and for the last 8 wk at 25 Ul/kg BW once a week. The correction of anemia was assocd. with an increase in plasma thiamine and erythrocyte total thiamine as well as ETKA in HD patients and with an increase in erythrocyte total thiamine in ND patients only during the period of i.v. infusions.

CC 14-12 (Mammalian Pathological Biochemistry)

ST renal failure **hemodialysis thiamine** transketolase erythrocyte; uremia **hemodialysis thiamine** transketolase erythrocyte

IT Erythrocyte
Hemodialysis
Renal failure
(blood **thiamine** level and erythrocyte transketolase activity in hemodialyzed and nondialyzed patients during recombinant human erythropoietin **therapy**)

IT Hemoglobins
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(blood **thiamine** level and erythrocyte transketolase activity in hemodialyzed and nondialyzed patients during recombinant human erythropoietin **therapy**)

IT 9014-48-6, Transketolase
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(blood **thiamine** level and erythrocyte transketolase activity in hemodialyzed and nondialyzed patients during recombinant human erythropoietin **therapy**)

IT 59-43-8, **Thiamine**, biological studies
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(blood **thiamine** level and erythrocyte transketolase activity in hemodialyzed and nondialyzed patients during recombinant human erythropoietin **therapy**)

IT 11096-26-7, Erythropoietin
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(human, recombinant; blood **thiamine** level and erythrocyte transketolase activity in hemodialyzed and nondialyzed patients during recombinant human erythropoietin **therapy**)

L22 ANSWER 25 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1997:589407 HCAPLUS
DOCUMENT NUMBER: 127:246593
TITLE: Abnormal cyanide metabolism in uremic patients
AUTHOR(S): Koyama, K.; Yoshida, A.; Takeda, A.; Morozumi, K.; Fujinami, T.; Tanaka, N.
CORPORATE SOURCE: Division of Nephrology, Nagoya Daini Red Cross Hospital, Nagoya, 466, Japan
SOURCE: Nephrol., Dial., Transplant. (1997), 12(8), 1622-1628
CODEN: NDTREA; ISSN: 0931-0509
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We previously investigated the factors involved in uremic neuropathy in patients undergoing regular hemodialysis and found a significant relationship between the severity of vibration sensation impairment and the patients' smoking habits. The administration of methylcobalamin markedly improved the severity of uremic neuropathy in terms of vibration perception thresholds. We presumed that abnormal cyanide metab. is involved in the development of uremic neuropathy. Serum levels of thiocyanate (SCN-), the detoxication product of cyanide, were detd. in 12 patients with preterminal chronic renal failure (PCRF), 30 patients undergoing regular hemodialysis (HD patients), and 13 healthy volunteers as a control group. Nine of the 30 HD patients were smokers. In addn., in 10 HD patients without smoking habits and 10 non-smoking healthy volunteers, the proportion of each vitamin B12 analog in total vitamin B12 was estd. The mean serum SCN- level of the 12 PCRF patients (5.1.+-.1.5 .mu.g/mL) was significantly higher than that of the control (2.8.+-.0.9 .mu.g/mL) ($P<0.01$). The mean SCN- level before hemodialysis in the 21 non-smoking HD patients was identical to that in the PCRF group, whereas the level in the nine smoking HD patients (7.2.+-.1.8 .mu.g/mL) significantly higher than that in the non-smoking subgroup ($P<0.01$). In 16 HD patients with methylcobalamin treatment, serum SCN- levels were lower than in those without methylcobalamin treatment (4.5.+-.0.5 .mu.g/mL in non-smoking subgroup, $P<0.05$). And in the methylcobalamin-treated subgroup (n=5), the proportion of each vitamin B12 analog in total vitamin B12 was normal. In the untreated subgroup (n=5), the proportion of cyanocobalamin fraction (10.5.+-.2.6%) was as high as the level in Leber's disease patients, while the proportion of methylcobalamin fraction was low. And the serum cyanocobalamin level was higher in the treated subgroup. In uremic patients, cyanide detoxication capability is impaired because of a reduced SCN- clearance, and increased cyanocobalamin synthesis indicates elevation of cyanide pool, which would be related to the development of uremic neuropathy. Methylcobalamin was considered to be utilized in cyanide detoxication process via cyanocobalamin synthesis.

CC 14-12 (Mammalian Pathological Biochemistry)
Section cross-reference(s): 1, 4

ST thiocynate cyanide detoxication uremia neuropathy smoking;
hemodialysis thiocynate cyanide detoxication uremia neuropathy;
vitamin B12 cyanide detoxication uremia neuropathy

IT Chronic renal failure
Hemodialysis
Renal failure
Tobacco smoke
(thiocynate and cyanide metab. in chronic renal failure in human in relation to smoking, **vitamin B12 therapy** and **hemodialysis**)

IT Neuropathy
(uremic; thiocynate and cyanide metab. in chronic renal failure in human in relation to smoking, **vitamin B12 therapy** and **hemodialysis**)

IT 57-12-5, Cyanide, biological studies 302-04-5, Thiocyanate, biological studies
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence);

BPR (Biological process); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PROC (Process)
(thiocynate and cyanide metab. in chronic renal failure in human in relation to smoking, **vitamin B12 therapy** and **hemodialysis**)

IT 13422-55-4, Methylcobalamin
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(thiocynate and cyanide metab. in chronic renal failure in human in relation to smoking, **vitamin B12 therapy** and **hemodialysis**)

IT 68-19-9, **Vitamin B12**
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(thiocynate and cyanide metab. in chronic renal failure in human in relation to smoking, **vitamin B12 therapy** and **hemodialysis**)

L22 ANSWER 26 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1997:186649 HCAPLUS
DOCUMENT NUMBER: 126:304602
TITLE: Low serum **vitamin B12** levels in chronic high-flux **hemodialysis** patients
AUTHOR(S): Chandna, Shahid M.; Tattersall, James E.; Nevett, Gail; Tew, Christopher J.; O'Sullivan, John; Greenwood, Roger N.; Farrington, Ken
CORPORATE SOURCE: Department Renal Medicine, Lister Hospital, Stevenage, SG1 4AB, UK
SOURCE: Nephron (1997), 75(3), 259-263
CODEN: NPRNAY; ISSN: 0028-2766
PUBLISHER: Karger
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Blood serum levels, intake, gastro-intestinal absorption, and hemodialysis clearance of vitamin B12 were studied in high-flux hemodialysis patients. Over a 12-mo period serum B12 decreased from 497 to 391 ng/L. Twenty two of 67 patients developed subnormal B12 levels and received hydroxocobalamin supplements. As measured in the dialyzate 0-4.5 .mu.g B12 were cleared per dialysis. In vivo B12 clearance was 9.1 mL/min. Dietary studies on 24 patients showed borderline or low B12 intake in 4 patients.
CC 14-12 (Mammalian Pathological Biochemistry)
ST **vitamin B12** kidney failure **hemodialysis**
IT **Hemodialysis**
Renal failure
(blood serum **vitamin B12** in chronic high-flux **hemodialysis** patients)
IT 68-19-9, **Vitamin B12**
RL: BOC (Biological occurrence); **THU (Therapeutic use)**; BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(blood serum **vitamin B12** in chronic high-flux **hemodialysis** patients)

L22 ANSWER 27 OF 33 HCAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1996:686374 HCAPLUS
DOCUMENT NUMBER: 126:94726
TITLE: Sterilization of heparinized Cuprophane **hemodialysis** membranes
AUTHOR(S): Ten Hoopen, H. W. M.; Hinrichs, W. L. J.; Engbers, G. H. M.; Feijen, J.
CORPORATE SOURCE: Fac. Chem. Technol., Univ. Twente, Enschede, 7500, Neth.
SOURCE: J. Mater. Sci.: Mater. Med. (1996), 7(11), 699-704
CODEN: JSMMEL; ISSN: 0957-4530
PUBLISHER: Chapman & Hall
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The effects of sterilization of dry heparinized Cuprophane hemodialysis membranes by means of ethylene oxide (EtO) exposure, gamma irradn., or steam on the anticoagulant activity and chem. characteristics of immobilized heparin and the permeability of the membrane were investigated. Sterilization did not result in a release of heparin or heparin fragments from heparinized Cuprophane. Sterilization of heparinized Cuprophane by means of EtO exposure and gamma irradn. induced a slight, insignificant decrease of the anticoagulant activity. In contrast, steam-sterilized heparinized Cuprophane showed a higher anticoagulant activity than unsterilized heparinized Cuprophane, which was most likely caused by cleavage of some of the covalent bonds between heparin and Cuprophane. The effects of sterilization on the permeability of unmodified Cuprophane and heparinized Cuprophane were compared. The permeability of unmodified Cuprophane for vitamin B12 and sulfobromophthalein (SBP) was reduced by 20-35% after EtO exposure and gamma irradn. and was reduced by 90-95% after steam sterilization. The water permeability of unmodified Cuprophane remained the same after EtO exposure and gamma irradn. but also dramatically reduced after steam sterilization. These redns. were ascribed to the collapse of pores of the membrane. The permeability of heparinized Cuprophane was not affected by EtO exposure and gamma irradn. but dramatically reduced after steam sterilization, although to a lesser extent than in the case of unmodified Cuprophane. Apparently, the presence of immobilized heparin (partially) prevented the collapse of pores during sterilization. Gamma irradn. was recommended as the preferred method of sterilization for heparinized Cuprophane.

CC 63-7 (Pharmaceuticals)
ST heparin immobilization Cuprophane **hemodialysis** membrane sterilization
IT Membranes (nonbiological)
RL: RCT (Reactant)
(cellophane, heparinized; sterilization of heparinized Cuprophane **hemodialysis** membranes)
IT Cellophane
RL: RCT (Reactant)
(membranes, heparinized; sterilization of heparinized Cuprophane **hemodialysis** membranes)
IT Hemodialyzers
(membranes; sterilization of heparinized Cuprophane **hemodialysis** membranes)
IT Anticoagulants
Steam

Sterilization (cleaning)
(sterilization of heparinized Cuprophane **hemodialysis** membranes)

IT Gamma ray
RL: BSU (Biological study, unclassified); DEV (Device component use); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(sterilization of heparinized Cuprophane **hemodialysis** membranes)

IT 68-19-9, **Vitamin B12** 71-67-0, Sulfobromophthalein
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(sterilization of heparinized Cuprophane **hemodialysis** membranes)

IT 9005-49-6D, Heparin, Cuprophane-immobilized
RL: BSU (Biological study, unclassified); DEV (Device component use); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(sterilization of heparinized Cuprophane **hemodialysis** membranes)

IT 75-21-8, Oxirane, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(sterilization of heparinized Cuprophane **hemodialysis** membranes)

IT 9005-49-6, Heparin, reactions
RL: RCT (Reactant)
(sterilization of heparinized Cuprophane **hemodialysis** membranes)

L22 ANSWER 28 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1996:330584 HCAPLUS
DOCUMENT NUMBER: 125:55422
TITLE: **Folate** status is the major determinant of fasting total plasma homocysteine levels in maintenance **dialysis** patients
AUTHOR(S): Bostom, Andrew G.; Shemin, Douglas; Lapane, Kate L.; Nadeau, Marie R.; Sutherland, Patrice; Chan, Jennifer; Rozen, Rima; Yoburn, David; Jacques, Paul F.; et al.
CORPORATE SOURCE: Vitamin Bioavailability Laboratory, The Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts New England Medical Center, 711 Washington Street, Boston MA 02111, USA
SOURCE: Atherosclerosis (Shannon, Irel.) (1996), 123(1,2), 193-202
CODEN: ATHSBL; ISSN: 0021-9150
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Limited data are available on the determinants of homocysteinemia or the assocn. between plasma homocysteine (Hcy) levels and prevalent cardiovascular disease (CVD) in maintenance dialysis patients. The authors assessed etiol. of renal failure, residual renal function and dialysis adequacy-related variables, and vitamin status, as determinants of fasting total plasma homocysteine (Hcy) in 75 maintenance dialysis patients. The authors also assessed the potential interactive effect on plasma Hcy of folate status and a common mutation (ala to val; homozygous val-val frequency .apprxeq. 10%) in methylenetetrahydrofolate reductase (MTHFR), a folate-dependent enzyme crucial for the remethylation of

homocysteine (Hcy) to methionine. Lastly, the authors evaluated whether the Hcy levels differed amongst these patients in the presence or absence of prevalent CVD, after adjustment for the traditional CVD risk factors. Fasting total plasma Hcy, folate, pyridoxal 5'-phosphate (PLP; active B6), B12, creatinine, glucose, total and HDL cholesterol levels, and presence of the ala to val MTHFR mutation were detd., and clin. CVD and CVD risk factor prevalence were ascertained. General linear modeling/anal. of covariance revealed: (1) folate status and serum creatinine were the only significant independent predictors of fasting Hcy; (2) there was a significant interaction between presence of the val mutation and folate status, i.e., among patients with plasma folate below the median (< 29.2 ng/mL), geometric mean Hcy levels were 33% greater (29.0 vs. 21.8 .mu.M) in the pooled homozygotes (val-val) and heterozygotes (ala-val) for the ala to val mutation, vs. normals (ala-ala); (3) there was no assocn. between prevalent CVD and plasma Hcy. Given potentially intractable survivorship effects, prospective cohort studies will be required to clarify the relation between plasma Hcy or any putative CVD risk factor, and incident CVD in dialysis patients. If a pos. assocn. between plasma Hcy and incident CVD can be established in maintenance dialysis patients, the current data provide a rationale for addnl. folic acid supplementation in this patient population.

CC 14-12 (Mammalian Pathological Biochemistry)
Section cross-reference(s): 63

ST **folate** homocysteine kidney failure **dialysis** atherosclerosis

IT Mutation
(homocysteine, **folate**, pyridoxal phosphate, B12, creatinine, glucose, cholesterol, and methylenetetrahydrofolate reductase mutation in relation to cardiovascular disease in humans with renal disease on maintenance **dialysis**)

IT Arteriosclerosis
(atherosclerosis, homocysteine, **folate**, pyridoxal phosphate, B12, creatinine, glucose, cholesterol, and methylenetetrahydrofolate reductase mutation in relation to cardiovascular disease in humans with renal disease on maintenance **dialysis**)

IT Cardiovascular system
(disease, homocysteine, **folate**, pyridoxal phosphate, B12, creatinine, glucose, cholesterol, and methylenetetrahydrofolate reductase mutation in relation to cardiovascular disease in humans with renal disease on maintenance **dialysis**)

IT Kidney, disease
(failure, homocysteine, **folate**, pyridoxal phosphate, B12, creatinine, glucose, cholesterol, and methylenetetrahydrofolate reductase mutation in relation to cardiovascular disease in humans with renal disease on maintenance **dialysis**)

IT **Dialysis**
(hemo-, homocysteine, **folate**, pyridoxal phosphate, B12, creatinine, glucose, cholesterol, and methylenetetrahydrofolate reductase mutation in relation to cardiovascular disease in humans with renal disease on maintenance **dialysis**)

IT Lipoproteins

RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(high-d., cholesterol; homocysteine, **folate**, pyridoxal phosphate, B12, creatinine, glucose, cholesterol, and methylenetetrahydrofolate reductase mutation in relation to cardiovascular disease in humans with renal disease on maintenance **dialysis**)

IT 71822-25-8, Methylenetetrahydrofolate reductase
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(homocysteine, **folate**, pyridoxal phosphate, B12, creatinine, glucose, cholesterol, and methylenetetrahydrofolate reductase mutation in relation to cardiovascular disease in humans with renal disease on maintenance **dialysis**)

IT 50-99-7, D-Glucose, biological studies 54-47-7, Pyridoxal 5'-phosphate 57-88-5, Cholesterol, biological studies 60-27-5, Creatinine 68-19-9, **Vitamin B12**
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(homocysteine, **folate**, pyridoxal phosphate, B12, creatinine, glucose, cholesterol, and methylenetetrahydrofolate reductase mutation in relation to cardiovascular disease in humans with renal disease on maintenance **dialysis**)

IT **59-30-3, Folic acid**, biological studies
6027-13-0, L-Homocysteine
RL: BOC (Biological occurrence); **THU (Therapeutic use)**; BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(homocysteine, **folate**, pyridoxal phosphate, B12, creatinine, glucose, cholesterol, and methylenetetrahydrofolate reductase mutation in relation to cardiovascular disease in humans with renal disease on maintenance **dialysis**)

L22 ANSWER 29 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1996:122549 HCAPLUS
DOCUMENT NUMBER: 124:230774
TITLE: High dose B-vitamin treatment of hyperhomocysteinemia in **dialysis** patients
AUTHOR(S): Bostom, Andrew G.; Shemin, Douglas; Lapane, Kate L.; Hume, Anne L.; Yoburn, David; Nadeau, Marie R.; Bendich, Adrianne; Selhub, Jacob; Rosenberg, Irwin H.
CORPORATE SOURCE: USDA Human Nutrition Research Center Aging, Tufts, MA, USA
SOURCE: Kidney Int. (1996), 49(1), 147-52
CODEN: KDYIA5; ISSN: 0085-2538
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Hyperhomocysteinemia, an arteriosclerotic risk factor, persists in 75% of dialysis patients despite routine low dose supplementation with the B-vitamin co-factors substrates for homocysteine (Hcy) metab., and normal or supernormal plasma status of these vitamins. We conducted a placebo-controlled eight-week trial of the effect on plasma homocysteine of adding supraphysiol. dose folic acid (15 mg day). B-6 (100 mg day), and B-12 (1 mg/day) to the usual daily dosing of 1 mg folic acid, 10 mg B-6, and 12 .mu.g B-12, in 27 hyperhomocysteinemic dialysis patients. Total plasma homocysteine was measured at baseline, and after four and eight weeks. Blinded analyses revealed no evidence of toxicity in the

group randomized to supraphysiol. dose B-vitamin supplementation. Plasma homocysteine was significantly reduced after both four weeks (-29.8% vs. -2.0%; P = 0.0024) and eight weeks (-25.8% vs. +0.6%; P = 0.0009) of active vs. placebo treatment. Also, 5 of 15 treated vs. 0 of 12 placebo group patients had their plasma Hcy reduced to within the normative range (< 15 .mu.mol/L). Supraphysiol. doses of B-vitamins may be required to correct hyperhomocysteinemia in dialysis patients.

CC 18-2 (Animal Nutrition)
Section cross-reference(s): 1

ST vitamin B **folate** hyperhomocysteinemia **hemodialysis**

IT **Dialysis**
(hemo-, high dose B-vitamin treatment of hyperhomocysteinemia in humans
on **dialysis**)

IT **59-30-3, Folic acid**, biological studies
68-19-9, **Vitamin b-12** 8059-24-3, Vitamin B-6
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(high dose B-vitamin treatment of hyperhomocysteinemia in humans on **dialysis**)

IT 454-28-4, Homocysteine
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(metabolic disorders, hyperhomocysteinemia; high dose B-vitamin treatment of hyperhomocysteinemia in humans on **dialysis**)

L22 ANSWER 30 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1995:967909 HCAPLUS
DOCUMENT NUMBER: 124:21570
TITLE: **Folic acid** treatment of hyperhomocysteinemia in **dialysis** patients
AUTHOR(S): Janssen, M. J. F. M.; van Guldener, V.; Th. de Jong, G. M.; van den Berg, M.; Stehouwere, C. D. A.; Donker, A. J. M.
CORPORATE SOURCE: Dep. Internal Med., ICaR-VU Amsterdam, Neth.
SOURCE: Miner. Electrolyte Metab. (1995), Volume Date 1996, 22(1-3), 110-14
CODEN: MELMDI; ISSN: 0378-0392
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We measured fasting total plasma homocysteine (Hcy) in 10 chronic hemodialysis (HD) and 10 chronic peritoneal dialysis (PD) patients. Mean (.+-. SEM) Hcy was 55.7 .+-. 10.1 and 50.5 .+-. 14.3 .mu.mol/l, resp. (normal range 6-19 .mu.mol/l). Hemodialysis treatment lowered Hcy by about 30%. Daytime Hcy concns. were stable in the PD patients. Six wk. of treatment with folic acid (FA) significantly lowered Hcy in HD and PD patients to 24.0 .+-. 1.8 and 21.0 .+-. 3.6 .mu.mol/l, resp. After withdrawal, Hcy rose slowly, in parallel with the gradually decreasing plasma FA concns., which were greatly elevated during treatment. Chronic treatment with FA of another group of patients showed a similar effect on Hcy. Preliminary results of oral methionine loading in chronic dialysis patients were compatible with delayed homocysteine metab. via the transsulfuration pathway. Further studies on the optional treatment of hyperhomocysteinemia in chronic dialysis patients are needed.

CC 1-10 (Pharmacology)

ST **folate dialysis** homocysteine hyperhomocysteinemia

IT **Dialysis**
(**folic acid** treatment of hyperhomocysteinemia in human **dialysis** patients)
IT 63-68-3, Methionine, biological studies
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(**folic acid** treatment of hyperhomocysteinemia in human **dialysis** patients)
IT **59-30-3, Folic acid**, biological studies
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(**folic acid** treatment of hyperhomocysteinemia in human **dialysis** patients)
IT 454-28-4, Homocysteine
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(metabolic diseases, hyperhomocysteinemia; **folic acid** treatment of hyperhomocysteinemia in human **dialysis** patients)

L22 ANSWER 31 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1995:449877 HCAPLUS
DOCUMENT NUMBER: 122:230522
TITLE: Short-term betaine **therapy** fails to lower elevated fasting total plasma homocysteine concentrations in **hemodialysis** patients maintained on chronic **folic acid** supplementation
AUTHOR(S): Bostom, Andrew G.; Shemin, Douglas; Nadeau, Marie R.; Shih, Vivian; Stabler, Sally P.; Allen, Robert H.; Selhub, Jacob
CORPORATE SOURCE: Framingham, MA, 01701, USA
SOURCE: Atherosclerosis (Shannon, Irel.) (1995), 113(1), 129-32
CODEN: ATHSBL; ISSN: 0021-9150
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Oral betaine at 6 g/day does not appear to be effective in reducing total plasma homocysteine concns. in moderately hyperhomocyteinemic, dialysis-dependent ESRD (end-stage renal disease) patients maintained on 1-2 mg/day of folic acid. Much larger doses of folic acid alone or in combination with betaine doses considerably greater than 6 g/day may be required to normalize total plasma homocysteine concns. in ESRD patients with refractory hyperhomocyteinemia.
CC 1-10 (Pharmacology)
ST betaine hyperhomocyteinemia kidney disease **folate** supplementation
IT Drug interactions
(short-term betaine **therapy** fails to lower elevated homocysteine concns. in **hemodialysis** patients maintained on **folic acid** supplementation)
IT Kidney, disease
(failure, short-term betaine **therapy** fails to lower elevated homocysteine concns. in **hemodialysis** patients maintained on **folic acid** supplementation)
IT 6027-13-0, Homocysteine
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(metabolic disorder,; short-term betaine **therapy** fails to

lower elevated homocysteine concns. in **hemodialysis** patients maintained on **folic acid** supplementation)

IT **59-30-3, Folic acid**, biological studies
107-43-7, Betaine
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(short-term betaine **therapy** fails to lower elevated homocysteine concns. in **hemodialysis** patients maintained on **folic acid** supplementation)

L22 ANSWER 32 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1987:614345 HCAPLUS
DOCUMENT NUMBER: 107:214345
TITLE: Quantitative proton magnetic resonance of plasma from uremic patients during **dialysis**
AUTHOR(S): Grasdalen, Hans; Belton, Peter S.; Pryor, Jack S.; Rich, Gillian T.
CORPORATE SOURCE: Inst. Food Res., AFRC, Norwich, NR4 7UA, UK
SOURCE: Magn. Reson. Chem. (1987), 25(9), 811-16
CODEN: MRCHEG; ISSN: 0749-1581
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Proton NMR has been used to measure rapidly concns. of metabolites in plasma from patients with chronic renal failure (CRF) and normal subjects.
Detailed quant. analyses of spectra are presented for four CRF patients during hemodialysis, two patients in early stages of renal failure, and two normal subjects. For patients on acetate dialysis, the method clearly
shows how well exogenous acetate is metabolized during and after dialysis.
The results indicate a discrepancy between creatinine concns. measured by 1H NMR and by the kinetic Jaffe reaction method, and also point to high betaine concns. in plasma from some patients on maintenance hemodialysis and taking folate supplement.
CC 9-5 (Biochemical Methods)
Section cross-reference(s): 14
ST metabolite detn blood plasma uremia; NMR spectrometry metabolite uremia **hemodialysis**
IT **Dialysis**
(hemo-, metabolites detn. in plasma of uremic patients during)
IT **59-30-3**, biological studies
RL: BIOL (Biological study)
(betaine in blood plasma of uremic patients on **hemodialysis** and **therapy** with)

L22 ANSWER 33 OF 33 HCAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1986:490928 HCAPLUS
DOCUMENT NUMBER: 105:90928
TITLE: Role of culture conditions and exposure duration in determining sensitivity of human bone marrow progenitor cells to methotrexate
AUTHOR(S): Umbach, Guenter E.; Spitzer, Gary; Ajani, Jaffer A.; Hug, Verena; Thames, Howard; Rudolph, Frederick B.; Drewinko, Benjamin
CORPORATE SOURCE: Univ.-Frauenklin., Duesseldorf, D-4000, Fed. Rep. Ger.

SOURCE: J. Cancer Res. Clin. Oncol. (1986), 111(3), 273-6
CODEN: JCROD7; ISSN: 0171-5216
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The effect of drug concn., exposure duration, and culture conditions on the cytotoxic activity of methotrexate (MTX) [59-05-2] on normal granulocyte-macrophage colony-forming units culture (GM-CFUC) was studied by using a bilayer soft agar system with nucleoside-free medium. The degree of inhibition of colony formation depended on the type of serum supplementation. A 1 or 2 h pulse treatment with 2 .times. 10-4 M (100 .mu.g/mL) MTX failed to kill GM-CFUC, when the cells were subsequently plated in a system contg. 15% undialyzed fetal bovine serum (FBS). For continuous exposure the obsd. LD50 of MTX in the agar system was higher than 10-4 M for 15% undialyzed FBS, 10-5 M for 15% dialyzed FBS plus 0.25% undialyzed FBS, 10-6 M for 15% dialyzed FBS, and 10-8 M for 15% undialyzed horse serum. The difference for dialyzed FBS vs. horse serum can be explained by differences in nucleoside concns. The difference for dialyzed FBS vs. horse serum may be secondary to an enhancer of MTX in horse serum. For studying MTX sensitivity of human tumor cells in vitro, it is suggested that testing conditions lie within the concn.-survival curve of GM-CFUC.

CC 1-6 (Pharmacology)

IT Blood serum
(fetal bovine and horse, sensitivity of bone marrow cells of humans to methotrexate response to cultures contg., **dialysis** in relation to)

IT 59-05-2
RL: BAC (Biological activity or effector, except adverse); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(neoplasm inhibition by, in bone marrow cells of humans, culture conditions and exposure duration effect on)

IT 50-89-5, biological studies **59-30-3**, biological studies 68-94-0
RL: BIOL (Biological study)
(of sera and culture media, sensitivity of bone marrow cells to methotrexate in relation to)

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L5         1155 S L4 OR COBALAMIN# OR CYANOCOBALAMIN# OR ERITRON
L6          699 S VITAMIN (2W) (B6 OR B6)
L7         8050 S DIALYSIS OR HEMODIALYSIS OR HAEMODIALYSIS
L8         3700 S L2 OR L3 OR L5 OR L6
L9           29 S L8 AND L7
L10        8326 S L7 OR DIALYSAT?
L11          29 S L8 AND L10

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L11  ANSWER 1 OF 29  WPIDS COPYRIGHT 2000   DERWENT INFORMATION LTD
AN   2000-454475 [40]   WPIDS
CR   1992-280089 [34]; 2000-415428 [34]; 2000-454472 [38]; 2000-454473 [38];
     2000-454474 [38]
DNC  C2000-138654
TI   Agent for increasing vitamin in blood, useful for treating hyperlipidemia
     and dermatological disorders, comprises active ingredient obtained from
     dietary fiber and oligosaccharide.
DC   B04 D13
PA   (RNAK-N) RNA KENKYUSHO YG
CYC  1
PI   JP 2000154144 A  20000606 (200040)*       5p
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ADT JP 2000154144 A Div ex JP 1990-320844 19901127, JP 1999-358867 19901127
PRAI JP 1990-320844 19901127; JP 1999-358867 19901127
AB JP2000154144 A UPAB: 20000823
NOVELTY - Agent for increasing vitamin in blood comprises a principle component obtained from a fine dietary fiber and oligosaccharide.
ACTIVITY - Antiseborrheic; antiinflammatory; antilipemic; dermatological; analgesic.
A test was performed on ten chronic **dialysis** patients undergoing **dialysis** twice weekly for 6 hours. The blood serum electrolyte concentrations of the **dialysis** patients were measured. The patients were administered with dietary fiber agent in the form of a tablet (containing 0.189 g of dietary fibers and 0.082 g of fructo-oligosaccharide) once daily for 45 days. The amounts of blood serum potassium, sodium, calcium and phosphorous were measured after 1 month and 2 months. The results showed that the blood serum potassium and phosphorus reduced after taking the fiber agent and the fluctuation significance of sodium and calcium was eliminated.
MECHANISM OF ACTION - None given.
USE - For improving high phosphorus blood disease, hyperlipidemia and headache and elimination of shoulder stiffness. Also useful in treating acne, folliculitis, pigmentation and dandruff, dermatological disorders such as dry skin and hemorrhoidal diseases.
ADVANTAGE - The agent increases the vitamin levels (**folic acid** and **vitamin B12**) in the blood. The formulation does not contain electrolyte such as potassium, phosphorous, magnesium and sodium. The formulation can therefore be taken by patients suffering from renal failure, cardiac failure and patients undergoing **dialysis**. The formulation does not have any side effects.
Dwg.0/0

L11 ANSWER 2 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 2000-365047 [31] WPIDS
DNN N2000-273216
TI Blood flow rate measurement in **hemodialysis** treatment, comprises computing blood flow rate using measured concentration of substance in **dialysis** fluid in dialyzer.
DC P31 P34 S02 S05
IN ASBRINK, P; MISHKIN, G; NILSSON, E; STERNBY, J
PA (GAMB) GAMBRO AB
CYC 85
PI WO 2000024440 A1 20000504 (200031)* EN 38p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
AU 2000014299 A 20000515 (200039)
ADT WO 2000024440 A1 WO 1999-SE1915 19991022; AU 2000014299 A AU 2000-14299 19991022
FDT AU 2000014299 A Based on WO 200024440
PRAI US 1998-105396 19981023
AB WO 200024440 A UPAB: 20000630

NOVELTY - The blood flow rate (Qa) in **hemodialysis** access is computed using the formula Cd (norm)/Cd (rev)=1+K/Qa, where Cd (norm) and Cd (rev) are the values proportional to the concentration of substrate in the **dialysis** fluid in the normal and reversed positions respectively, and K is the clearance of dialyzer.

DETAILED DESCRIPTION - Initially, the primary blood flow from the **hemodialysis** access in the nature of an arterio-venous shunt or fistula is removed at a removal position to external flow circuit comprising a dialyzer having a semipermeable membrane. The membrane is formed such that the primary blood flow passes along its one side and **dialysis** fluid is emitted from the other side. Then, the primary blood flow from the external flow circuit is returned to the **hemodialysis** access at a return position at the downstream side of removal position. A primary variable, which is essentially proportional to a concentration (Cd norm) of the substance in the **dialysis** fluid emitted from the dialyzer, is measured. Then the removal portion is reversed with the return position. A secondary variable which is essentially proportional to the concentration (Cd rev) of the substance in the **dialysis** fluid in the reversed position, is measured. Then, the blood flow rate in the **hemodialysis** access is computed using measured concentration. The effective dialyzer clearance Keff and K used in the calculation of blood flow rate is obtained based on cardiopulmonary recirculation at a normal position. The substance used in the **dialysis** fluid is selected from a group consisting of urea, creatinine, **vitamin B12**, beta -two-microglobuline and glucose. The substance can be an ion selected from Na+, Cl-, K+, Mg2+, Ca2+, HCO3-, acetate ions or any combination of these ions as measured by conductivity. The concentration of the substance is measured as concentration difference between outlet and inlet of the dialyzer.

An INDEPENDENT CLAIM is also included for a blood flow rate measuring apparatus for use during **hemodialysis** treatment.

USE - For measuring blood flow rate during treatments such as **hemodialysis**, hemofiltration, hemodiafiltration, plasmapheresis, blood component separation, blood oxygeneration, etc. Also for use in any tube system where fluid is passed and a portion of fluid is taken for **dialysis** e.g. for beer or wine production.

ADVANTAGE - Enables reliable measurement of blood flow rate without interfering with blood and without injecting any substance into blood. The reliable blood flow rate measurement is also further enabled without measuring on the blood in the extracoporeal blood circuit or in the access or blood vessel. Provides a reliable valve for reversing the blood flow.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic diagram of a blood flow circuit in a patient, along with an attached extra-corporeal blood circuit.

Dwg.3/14

L11 ANSWER 3 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 2000-237769 [20] WPIDS
DNC C2000-072429
TI Blended composition for treating Alzheimer's disease and other amyloidoses

comprises plant matter from Unicaria tomentosa.
DC B02 B03 B04
IN CASTILLO, G; SNOW, A D
PA (PROT-N) PROTEOTECH INC
CYC 86
PI WO 2000012102 A1 20000309 (200020)* EN 32p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW
AU 9963840 A 20000321 (200031)
ADT WO 2000012102 A1 WO 1999-US19721 19990830; AU 9963840 A AU 1999-63840 19990830
FDT AU 9963840 A Based on WO 200012102
PRAI US 1998-98473 19980831
AB WO 200012102 A UPAB: 20000426
NOVELTY - An agent for treatment of amyloid disease comprises plant matter
from Uncaria tomentosa blended with at least one ingredient.
DETAILED DESCRIPTION - An agent (I) for treatment of amyloid disease comprises plant matter from Uncaria tomentosa (1) blended with at least one ingredient (2).
An INDEPENDENT CLAIM is also included for a method of treating an amyloid disease by administering (I) to the patients.
ACTIVITY - Nootropic; neuroprotective; cerebroprotective; hemostatic;
antiinflammatory; antidiabetic; analgesic.
MECHANISM OF ACTION - Amyloid inhibitor
USE - In amyloid associated diseases such as Alzheimer's disease, Down's syndrome, cerebral hemorrhage, amyloidosis of Dutch type, chronic inflammation, malignancy, Familial Mediterranean Fever, multiple myeloma, B-cell dyscrasias, type II diabetes, prion diseases, Creutzfeldt-Jakob disease, Gerstmann-Straussler syndrome, kuru, animal scrapie, long-term **hemodialysis**, carpal tunnel syndrome, senile cardiac amyloid, Familial Amyloidotic Polyneuropathy, endocrine tumors or medullary carcinoma of the thyroid (preferably Alzheimer's disease and type II diabetes) (claimed).
ADVANTAGE - No additional compounds or agents are required for amyloid formation, deposition, accumulation and/or persistence.
Dwg.0/5

L11 ANSWER 4 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 2000-205902 [18] WPIDS
DNN N2000-153145 DNC C2000-063619
TI Medical device e.g., catheter, obturator, or sheath, has a polymer body that is treated with an exposure enhancing agent to expose at least portion of the unexposed active ingredients.
DC A96 B07 D22 P34
IN DOVE, J; SIMAN, J
PA (BAXT) BAXTER INT INC
CYC 85
PI WO 2000009177 A1 20000224 (200018)* EN 26p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB

GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW

AU 9951272 A 20000306 (200030)

ADT WO 2000009177 A1 WO 1999-US16796 19990722; AU 9951272 A AU 1999-51272 19990722

FDT AU 9951272 A Based on WO 200009177

PRAI US 1998-135873 19980817

AB WO 200009177 A UPAB: 20000412

NOVELTY - Improved medical device comprises a polymer body treated with an exposure enhancing reagent, for a sufficient time, to expose at least portion of the unexposed active ingredients located within the polymer body surface and/or polymer matrix.

DETAILED DESCRIPTION - The medical device comprises a polymer body comprising a surface and a polymer matrix located within the polymer body.

The polymer body further comprises active ingredients having exposed portions that are located at the surface, and unexposed portions located at the surface and within the polymer matrix.

INDEPENDENT CLAIMS are also included for the following:

(1) a medical device comprising a non-conductive plasticized polymer body, comprising at least one iontophoretic compound, and further comprising a conductive polymer or an ionophore selected from metal, halide, proton or electron ionophores; and

(2) a medical device comprising a non-plasticized conductive polymer body, comprising at least one iontophoretic compound and further comprising an ionophore selected from metal, halide, proton, or electron ionophores.

ACTIVITY - Antimicrobial; anticoagulant.

MECHANISM OF ACTION - None given.

USE - The device is an improved antimicrobial and antithrombogenic device which can be used into contact with human fluids, such as extra-corporeal tubing, catheters, obturators, implants, artificial hearts, **dialysis** tubes, backforms, sheaths, housings and shunts.

ADVANTAGE - The device exhibit antithrombogenic properties. The device also has enhanced existing antimicrobial properties. The surface treatment results in a larger reaction area of the iontophoretic capable composition that produces larger yields of bacteriostatic oligodynamic ions for a longer duration, increasing the antimicrobial effectiveness of the composition.

Dwg.0/4

L11 ANSWER 5 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD

AN 1999-373403 [32] WPIDS

DNN N1999-278768 DNC C1999-110292

TI Polysulfone-based hollow fiber membrane preparation process.

DC A14 A26 A32 A88 A94 F01 F07 J01 P34

IN HU, C; SHIN, H K; HUH, C; SHIN, H G

PA (KOLO-N) KOLON IND INC

CYC 27

PI EP 927572 A2 19990707 (199932)* EN 9p

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

JP 11253771 A 19990921 (199950) 8p

JP 3026493 B2 20000327 (200020) 8p

KR 99062591 A 19990726 (200043)

ADT EP 927572 A2 EP 1998-124331 19981221; JP 11253771 A JP 1998-371544 19981225; JP 3026493 B2 JP 1998-371544 19981225; KR 99062591 A KR 1998-50322 19981124
FDT JP 3026493 B2 Previous Publ. JP 11253771
PRAI KR 1997-79120 19971230; KR 1997-79118 19971230
AB EP 927572 A UPAB: 19990813
NOVELTY - A process for producing a polysulfone-based hollow fiber membrane by extruding a spinning dope through a biannular spinning nozzle uses an internal and/or external coagulating liquid containing diethylene glycol and/or a salt which can form a hydrate.
DETAILED DESCRIPTION - A process for producing a polysulfone-based hollow fiber membrane, comprising (a) extruding a spinning dope comprising
polysulfone resin, organic solvent and poly(vinyl pyrrolidone) into air through a biannular spinning nozzle to obtain an extrudate in the form of a hollow fiber; (b) simultaneously injecting an internal coagulating liquid into an inside bore of the nozzle; and (c) introducing the extrudate into an external coagulating liquid, uses an internal and/or external coagulating liquid containing diethylene glycol and/or a salt which can form a hydrate.
USE - For producing membranes used in **haemodialysis**, microfiltration, ultrafiltration, reverse osmosis and gas separation. The membranes are very effective in medical applications, e.g. an artificial kidney.
ADVANTAGE - The membranes have an excellent separation capability and
permeability as the process forms large numbers of similar-sized pores. The process leaves large amounts of the poly(vinyl pyrrolidone) water-soluble polymer at the inside of the membrane, increasing hydrophilicity and giving the membrane a higher water permeability than a comparative membrane with a similar rejection rate (similar pore size). Material in solution of a specified size may be rejected selectively.
Dwg.0/1

L11 ANSWER 6 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1999-312856 [26] WPIDS
DNC C1999-092320
TI Alpha-keto carboxylic acid compositions for enhancing phosphorylation potential,.
DC B05 B07 D21
IN BUNGER, R
PA (USSA) US SEC OF ARMY
CYC 82
PI WO 9921544 A1 19990506 (199926)* EN 77p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
AU 9887663 A 19990517 (199939)
ADT WO 9921544 A1 WO 1998-US16141 19980803; AU 9887663 A AU 1998-87663 19980803
FDT AU 9887663 A Based on WO 9921544
PRAI US 1997-999767 19971027
AB WO 9921544 A UPAB: 19990707
NOVELTY - A method for enhancing the phosphorylation potential within

mammalian cells to prevent deterioration, or to promote restoration and preservation of normal cell functions, comprises the administration of a salt of an alpha-ketocarboxylic acid.

DETAILED DESCRIPTION - A method for enhancing the phosphorylation potential within mammalian cells to prevent deterioration, or to promote restoration and preservation of normal cell functions, comprises the administration of a pharmaceutical composition containing a salt of an alpha-ketocarboxylic acid. The acid has formula R(CO)(CO)OM (1);

R = 1-12C alkyl (optionally substituted), 3-10C cycloalkyl, 2-6C alkenyl, 3-6C alkynyl, benzyl (optionally substituted by Me, or phenyl on the alpha C, or by Me, dimethyl, halo, dihalo or OEt on the phenyl ring), adamantyl, phenyl (optionally substituted), or naphthyl (optionally up to tri-substituted by 1-4C alkyl, halo, 1-4C alkoxy, phenoxy, trihalomethyl, dimethylamino, diethylamino);

M = cation.

INDEPENDENT CLAIMS are made for:

(a) the administration of a parenteral fluid, a rehydration fluid which may contain elecrolyte balances, a topical composition, an antibiotic and antiphylogistic, a composition for treating local skin disorders, an erosolized composition optionally with a bronchodilating agent, food product, or a composition containing a **thiamine** (B1) vitamin capsule, all containing the active agent as above;

(b) perfusion of a mammalian organ with the active agent as above;

(c) a method of enhancing the phosphorylation potential within bacterial or viral cells in culture or cloning media comprising adding to the incubation solution a composition containing the active agent as above; and

(d) all the fluids and compositions etc in claim (a).

ACTIVITY - Prevents deterioration, or promotes the restoration and preservation of normal cell function.

MECHANISM OF ACTION - Enhances phosphorylation potential.

USE - Pyruvate can be used for:

(1) recovery from circulatory shock e.g. hypoxia, reperfusion after ischemia and myocardial infarct, acidosis;

(2) radiation overdose producing free radicals; rejuvenating stored blood;

(3) oral rehydration therapy;

(4) emergency fluids for a drop in oxygen partial pressure;

(5) preventing premature skin aging;

(6) antiobesity diets;

(7) psychotic crises;

(8) broncho-pulmonary dysplasia in premature infants;

(9) disseminated intravascular coagulation.

ADVANTAGE - Pyruvate improves the basal status of living cells and organs without affecting cellular energy status and without using drugs which shift the energy demand/supply balance towards increased demand.

L11 ANSWER 7 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1999-190016 [16] WPIDS
DNN N1999-139019 DNC C1999-055842
TI **Dialysate** solutions containing vitamin and nutrient supplements useful in **haemodialysis** and peritoneal **dialysis** - e.g. **folic acid, vitamin-B12**, carnitine and iron, avoids deficiency disorders..
DC B05 P34
IN GUPTA, A
PA (GUPT-I) GUPTA A

CYC 81
PI WO 9907419 A1 19990218 (199916)* EN 40p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA US UZ VN
AU 9888988 A 19990301 (199928)
EP 1009452 A1 20000621 (200033) EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
ADT WO 9907419 A1 WO 1998-US16383 19980806; AU 9888988 A AU 1998-88988 19980806; EP 1009452 A1 EP 1998-940797 19980806, WO 1998-US16383 19980806
FDT AU 9888988 A Based on WO 9907419; EP 1009452 A1 Based on WO 9907419
PRAI US 1997-55015 19970807
AB WO 9907419 A UPAB: 19990424
NOVELTY - The use of a **dialysate** solution comprising at least one vitamin to improve the nutritional status of a **dialysis** patient is new.
DETAILED DESCRIPTION- Preventing or correcting vitamin deficiency in a **dialysis** patient comprises use of a **dialysate** solution comprising at least one vitamin selected from **folic acid, vitamin B6, thiamine, vitamin B12** and their salts. INDEPENDENT CLAIMS are included for: (i) a **dialysate** solution containing at least one vitamin selected from **folic acid, vitamin B6, thiamine, vitamin B12**, vitamin C, carnitine and their salts; and (ii) a vitamin concentrate for use in a **dialysate** solution comprising at least one vitamin selected from **folic acid, vitamin B6, thiamine, vitamin B12** and their salts.
USE - The solution is of use in both **haemodialysis** and peritoneal **dialysis** (claimed) and is useful for e.g patients with renal failure.
ADVANTAGE - The bioavailability of the vitamins and nutrients in the **dialysis** solution is high, in contrast to oral administration, allowing cost effectiveness, more exact dosage and avoiding excessive accumulation of any agent dosed, with possible clinical side effects. Patient non-compliance, a feature of oral medication of subjects requiring many types of pills a day and gastrointestinal side effects, as well as the expense and drawbacks of administration by injection, are all avoided.
Dwg.0/0

L11 ANSWER 8 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1995-331621 [43] WPIDS
DNC C1995-146744
TI Polyether polyamide copolymer hollow fibre membrane - includes activated layer on inside or outside face.
DC A23 A88 A96 J01
PA (TERU) TERUMO CORP
CYC 1
PI JP 07227527 A 19950829 (199543)* 12p
ADT JP 07227527 A JP 1994-43140 19940217
PRAI JP 1994-43140 19940217
AB JP 07227527 A UPAB: 19951102
Hollow fibre membrane is made from polyether-polyamide copolymer which

contains polyamide with at least 30 mJ/mg crystallisation heat or polymer alloy which is prepd. from the polyether polyamide copolymer and polyamide whose crystallisation heat is up to 30 mJ/mg. An activated layer is formed on the inside or outside face of the membrane. Voids and porous structure are formed between the activated layer and the counter face. In another claimed membrane, a porous structure having open pores is formed between.

USE - For blood filtration or **dialysis**.

ADVANTAGE - The membrane has higher water permeability(e.g., 1175 ml/m2.hr.mmHg) and good affinity to human bodies. It has a smaller screening constant of up to 0.01 for albumin Al permeation, so that albumin is hardly leaked out of the membrane. Medium size molecules such as **Vitamin B12**, beta2-microglobulin, or beta2-MG can be permeated with a higher efficiency; 3.05 micro-mole/sec for **Vitamin B12**.

Dwg.0/0

L11 ANSWER 9 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1993-223529 [28] WPIDS
DNC C1993-099069
TI Di hydro-**folic acid** reductase contg. cysteine residue and modified gene - can be used as bio-reactor element.
DC B04 D16
PA (AGEN) AGENCY OF IND SCI & TECHNOLOGY
CYC 1
PI JP 05146291 A 19930615 (199328)* 11p
JP 06048981 B2 19940629 (199424) 11p
ADT JP 05146291 A JP 1991-336236 19911126; JP 06048981 B2 JP 1991-336236 19911126
FDT JP 06048981 B2 Based on JP 05146291
PRAI JP 1991-336236 19911126
AB JP 05146291 A UPAB: 19931116

Reductase contg. cysteine residue at the carboxy terminal and having the specified aminoacid sequence is new. Modified gene of dihydrofolic acid reductase having a specified DNA sequence is also new.

The modified gene is prepd. by chemically replacing the carboxy terminal code of reductase DNA with a chemically synthesised cysteine-coding DNA, ligated into a plasmid vector, transformed into Escherichia coli, and expressed to give the aimed reductase. The modified gene can be cleaved at the terminal with BgIII and liaged into pCYSI which is transformed into E. coli (FERM BP-3600).

The transformant E. coli (FERM BP-3600) may be cultured in a liq YT + Ap medium (contg. 5 g/L NaCl, 8 g/L trypton, 5 g/L yeast extract and 50 mg/L ampicillin Na) at 20-40 deg.C (pref. 37 deg.C). The accumulated cells are collected and crushed, from which the reductase solubilised with a surfactant is isolated and purified by salting-out, pptn., **dialysis**, and chromatography.

USE/ADVANTAGE - As stable immobilised enzyme since it has HS of cysteine at the carboxy terminal, through which the reductase can be immobilised on a solid phase without decreasing the enzyme activity. The immobilized enzyme can be used as bioreactor element.

Dwg.0/4

L11 ANSWER 10 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1993-061595 [08] WPIDS
DNC C1993-027746
TI Bathing agent effective against skin diseases - contg. garlic extract having active vitamin-B1 deriv. and plant extract(s) contg. ingredient eliminating itching.
DC B04 B05 D21 E19
PA (FUJI-N) FUJI SANGYO CO LTD; (TAKE) TAKEDA CHEM IND LTD
CYC 1
PI JP 05009110 A 19930119 (199308)* 6p
JP 3103396 B2 20001030 (200057) 6p
ADT JP 05009110 A JP 1991-203539 19910719; JP 3103396 B2 JP 1991-203539 19910719
FDT JP 3103396 B2 Previous Publ. JP 05009110
PRAI JP 1990-190622 19900720
AB JP 05009110 A UPAB: 19931119
Bathing agent contains garlic extract contg. an active vitamin B1 deriv(s). and a plant extract(s) contg. an ingredient mitigating itching. Vitamin deriv. is pref. one or a mixt. of alithiamine, **thiamine** propyl disulphide and **thiamine** tetrahydrofurfuryl disulphide.
USE - Agent mitigates atopic skin inflammation, and the itching of patients under artificial **dialysis**
Dwg.0/0

L11 ANSWER 11 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1992-166482 [20] WPIDS
TI Liq. nutritional prod. for admin. to person having renal **dialysis** - contains protein, fat, carbohydrate, vitamins and minerals in an 8 fluid ounce serving.
DC B05 D13
IN COCKRAM, D B; GLUVNA, J A; KNISLEY, T M; MULCHANDANI, R P; COCKRAM, D; MULCHANDAR, R P; MULCHANDANI, R
PA (ABBO) ABBOTT LAB
CYC 11
PI US 5108767 A 19920428 (199220)* 9p
WO 9222218 A1 19921223 (199302) EN 29p
AU 9221542 A 19930112 (199317)
EP 587824 A1 19940323 (199412) EN
AU 659188 B 19950511 (199527)
EP 587824 A4 19940615 (199531)
EP 587824 B1 19960717 (199633) EN 15p
R: BE DE DK ES FR GB IT NL SE
DE 69212316 E 19960822 (199639)
ES 2092275 T3 19961116 (199702)
ADT US 5108767 A US 1991-712768 19910610; WO 9222218 A1 WO 1992-US3804 19920507; AU 9221542 A AU 1992-21542 19920507; EP 587824 A1 WO 1992-US3804 19920507, EP 1993-900015 19920507; AU 659188 B AU 1992-21542 19920507; EP 587824 A4 EP 1993-900015 ; EP 587824 B1 WO 1992-US3804 19920507, EP 1993-900015 19920507; DE 69212316 E DE 1992-612316 19920507, WO 1992-US3804 19920507, EP 1993-900015 19920507; ES 2092275 T3 EP 1993-900015 19920507
FDT AU 9221542 A Based on WO 9222218; EP 587824 A1 Based on WO 9222218; AU 659188 B Previous Publ. AU 9221542, Based on WO 9222218; EP 587824 B1 Based on WO 9222218; DE 69212316 E Based on EP 587824, Based on WO

9222218; ES 2092275 T3 Based on EP 587824
PRAI US 1991-712768 19910610
AB US 5108767 A UPAB: 19931006
Liq. nutritional prod. contg. protein, fat, carbohydrate, vitamins and minerals comprises in an 8 fl.oz serving (a) 14.25-22g protein, (b) 150-240mg sodium, (c) 200-280mg potassium; (d) 175-325mg chloride; (e) 25-75mg magnesium (solely as calcium magnesium caseinate; (f) 225-420mg calcium; (g) 125-210mg phosphorus; (h) 1.75-2.8mg **vitamin B6**; (i) 200-275 micro-g **folic acid**; (j) 15-50mg vitamin C; (k) not more than 500 IV vitamin A; (l) not more than than 40 IV vitamin D; and (m) 355-593 calories.
USE/ADVANTAGE - The liq. nutritional prod. is specifically formulated to meet the needs of a person receiving renal **dialysis**, and the caloric distribution, vitamins and minerals, and electrolytes are carefully controlled. It can be used as an oral supplement to suboptimal diet or as a prim. source of nutrition. Where it provides patients with renal disease with 100% suggested nutrient intakes in for 8 fl.oz servings per day (1900 Kcal)
0/0

L11 ANSWER 12 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1990-297318 [39] WPIDS
DNN N1990-228555 DNC C1990-128444
TI Cancer therapy by removing aminoacid(s) and **folate**(s) from blood - by extracorporeal circulation through contg. enzymes to modify chemical structure.
DC B04 D16 J01 P34
IN SHETTIGAR, U R
PA (SHET-I) SHETTIGAR U R; (UTAH) UNIV UTAH
CYC 1
PI US 4955857 A 19900911 (199039)*
US 5464535 A 19951107 (199551) 9p
ADT US 4955857 A US 1988-231133 19880810; US 5464535 A US 1988-220544 19880718
PRAI US 1988-231133 19880810; US 1988-220544 19880718
AB US 4955857 A UPAB: 19960115
Method of simultaneously depleting essential and nonessential amino acids and folates from a fluid comprises shunting the fluid through a system for altering the chemical structure of the amino acids and folates to deplete the fluid. pref. enzymatic depletion is used.
USE/ADVANTAGE - Used for treating cancers dependent on the presence of the amino acids and folates, by extracoporeal circulation of the blood through the depletion system. The method devices key nutrients to the cancerous cells, restricting their growth, and it is unlikely that the cells can adapt/mutate to synthesise all key nutrients, so that development of resistance is reduced. The use of enzymes in an extracorporeal system minimises anaphylactic reactions, antigenicity and toxic effects. @(12pp Dwg.No.0/4)
0/4

L11 ANSWER 13 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1985-147001 [25] WPIDS
DNC C1985-063991
TI Polyether polyurethane **haemodialysis** membranes - produced from

cyclo-aliphatic di isocyanate and hard and soft segment contg. polyether.
DC A25 A88 J01 P34
IN HENTSCHEL, P; JOSEFIAK, C; KLOSTERME, W
PA (ALKU) AKZO GMBH
CYC 3
PI DE 3341847 A 19850613 (198525)* 29p
JP 60126164 A 19850705 (198533)
US 4767535 A 19880830 (198837)
DE 3341847 C 19900823 (199034)
ADT DE 3341847 A DE 1983-3341847 19831119; JP 60126164 A JP 1984-242590 19841119; US 4767535 A US 1986-899932 19860825
PRAI DE 1983-3341847 19831119
AB DE 3341847 A UPAB: 19930925
Membranes for **haemodialysis** and/or haemofiltration are based on addn. prods. of aliphatic diisocyanates and at least one cpd. having 2 active H atoms, with a molar ratio of soft to hard segments of 0-0.20, an ultra-filtration rate of 0.5-300 ml/hxsq.m x Torr and a dialytic permeability to **Vitamin B12** of 0.5-20x10E-3cm. minute.
Pref. the membrane has an ultrafiltration rate of 0.5-100ml/hxsq.m .TORR and a soft:hard segments molar ratio of 0:0.10 and an isotropic homogeneous structure under visible light. The addn. polymer is derived from a cycloaliphatic diiosocyanate, esp. trans-cyclohexane-diiosocyanate-1,4, a softe segment based on a polyether with an average mol. wt. +600-4000 and a hard segment based on a cpd. with two active H atoms, esp. hydrazine, ethylene diamine, ethylene glycol and butane diol-1,4.
USE/ADVANTAGE - Membranes are storage stable, compatible with blood and effective for protein e.g. albumin retention at high filtration rates, esp. in **haemodialysis** for the sepn. of cpds. of 2000-3000 Dalton mol. wt. responsible for uraemic intoxication.
/0

L11 ANSWER 14 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1985-057070 [10] WPIDS
DNN N1985-042678 DNC C1985-024818
TI Segmented polyether-polycarbonate prepn. - from bisphenol-A and aliphatic polyether diol by interfacial phase process.
DC A23 A25 A88 B04 D15 D16 J01 P34
IN DHEIN, R; SCHRECKEN, M; WALDENRATH, W
PA (FARB) BAYER AG
CYC 10
PI DE 3408803 A 19850228 (198510)* 34p
EP 135760 A 19850403 (198514) DE
R: CH DE FR GB IT LI NL SE
JP 60060130 A 19850406 (198520)
US 4563516 A 19860107 (198605)
ADT DE 3408803 A DE 1984-3408803 19840310; EP 135760 A EP 1984-109476 19840809; JP 60060130 A JP 1984-169459 19840815; US 4563516 A US 1984-640914 19840815
PRAI DE 1983-3329975 19830819; DE 1983-3335590 19830930; DE 1984-3408803 19840310
AB DE 3408803 A UPAB: 19930925
Segmented aliphatic-aromatic polyether-polycarbonates with Mw 50,000-350,000 and (I) 95-65 wt.% of 2,2-bis-(4-hydroxyphenyl)-propane carbonate units of formula (Ia) (II) 5-35 wt.% of polyether-carbonate

units of formula (-O- polyether-O-CO-), and opt. (III) aryl carbonate units of formula (Ar-O-CO-), are prepd. by the interfacial phase process in a mixt. of organic solvent and an aq. alkaline phase, at 0-35 deg. C, from aliphatic polyether diols with Mn 600-10,000, bisphenol A, COCl2, and opt. a monophenol chain breaker, by (a) using a molar excess of COCl2 w.r.t. the organic dihydroxy cpds., (b) keeping the pH of the aq. phase at at least 13, and (c) polycondensing with addn. of an amine catalyst. The polymer is purified, isolated and dried. -O-polyether-)= an aliphatic polyether diolate residue with Mn 600-20,000; Ar= a carbocyclic aromatic gp.

USE/ADVANTAGE - Is prodn. of a membrane 10-50 mu thick. The membranes are used for **dialysis**, ultrafiltration and reversed osmosis. Uses include **haemodialysis**, haemofiltration, sepn. of pyrogens, plasma phoresis, enrichment of macromol. Substances in soln. or suspension, desalination, fractionation or sepn. of molecules of high or low mol. wt., processing of biological substances (e.g. enzymes, hormones, nucleic acid and other proteins) prepn. of clinical samples for analysis, sepn. of viruses and bacteria, recovery of prods. from fermentation, and electrophoresis or immunoelectrophoresis.

ADVANTAGE - The membranes have better permeability and sepn. rates, shorter **dialysis** times, qood **vitamin B12** permeability, good transparency and bursting strength, and are free from residues of pyridine.

0/0

L11 ANSWER 15 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1984-289312 [47] WPIDS
DNN N1984-215738 DNC C1984-122848
TI **Haemodialysis** membrane from regenerated cellulose - has improved ultrafiltration rate and diffusive permeabilities.
DC A11 A88 J01 P34
IN AMSTUTZ, S; HEIDEL, P; WALCH, A
PA (FARH) HOECHST AG
CYC 13
PI DE 3317037 A 19841115 (198447)* 22p
EP 128325 A 19841219 (198451) DE
R: AT BE CH DE FR GB IT LI LU NL SE
JP 59206007 A 19841121 (198502)
CA 1222107 A 19870526 (198725)
ADT DE 3317037 A DE 1983-3317037 19830510; EP 128325 A EP 1984-104912 19840502; JP 59206007 A JP 1984-91985 19840510
PRAI DE 1983-3317037 19830510
AB DE 3317037 A UPAB: 19930925
Membrane (I) of viscose, having ultrafiltration rate 15x10 power minus 5 to 30 x 10 power minus 5 cm./sec. bar and diffusive permeability 3.0 x 10 power minus 4 to 11 x 10 power minus 4 cm./sec. for urea and 9.0 x 10 power minus 5 to 13.5 x 10 power minus 5 cm./sec. for **vitamin B12** (c.f. U.S. Dept. Health, Education, and Welfare Publication (NIH) 77-1294, pp. 7-28 and 192-198).

Prepn. of (I) in which cellulose is converted into alkali-cellulose, treated with CS2 to form viscose, then extruded through spinneret into a pptn. liq. contg. a mineral acid, wherein before viscose enters spinneret it is thoroughly mixed in a homogeniser with a liq. (II) contg. a dil. aq.

soln., an emulsion, or dispersion of a lower or high mol. cpd. which is sol., emulsifiable, or dispersible in water.

Pref. (I) is tube membrane having wet strength (bursting strength, DIN 53112) at least 0.33 bar, ultrafiltration rate at least 18 x 10-5, partic. 19 x 10-5 to 25 x 10-5 cm./sec. bar (measured at 0.1-3.0 bar, 20 deg. C., in cylindrical cell, 350 ml., stirred at 500 r.p.m., membrane area 43 sq.m.), diffusive permeability for urea 8.5 x 10-4 to 10 x 10-4 cm./sec. and for **vitamin B12** at least 9.5 x 10-5, partic. 10 x 10-5 to 12.5 x 10-5, cm./sec. (measured with carrier-free membranes at 37 deg. C., using soln. contg. 1500 ppm urea or 1000 ppm **vitamin B12**).

USE/ADVANTAGE - For **dialysis**, partic. **haemodialysis**. (I) has improved ultrafiltration capacity and diffusive permeabilities.
0/0

L11 ANSWER 16 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1984-159790 [26] WPIDS
DNN N1984-118837 DNC C1984-067376
TI Polycarbonate copolymer membrane for e.g. simultaneous **haemodialysis** - with diffusive permeability to chloride, **vitamin-B12** and insulin.
DC A88 J01 P34
IN BUCK, R J; GOEHL, H J; GULLBERG, C A; KONSTATIN, P; OHMAYER, M T
PA (GAMB) GAMBRO DIALYSATOREN GMBH
CYC 14
PI EP 111663 A 19840627 (198426)* EN 11p
R: AT BE CH DE FR GB IT LI LU NL
SE 8206515 A 19840618 (198427)
JP 59103671 A 19840615 (198430)
DK 8305157 A 19840702 (198433)
DE 3374987 G 19880204 (198806)
US 4935140 A 19900619 (199027)
EP 111663 B 19871223 (199204) EN
R: AT BE CH DE FR GB IT LI LU NL
EP 111663 B2 19920122 (199204)
R: BE CH DE FR GB IT LI LU NL
JP 04068969 B 19921104 (199248) 5p
ADT EP 111663 A EP 1983-110164 19831012; JP 59103671 A JP 1983-214937 19831115; US 4935140 A US 1986-937447 19861205; JP 04068969 B JP 1983-214937 19831115
FDT JP 04068969 B Based on JP 59103671
PRAI SE 1982-6515 19821116
AB EP 111663 A UPAB: 19970915
Flat sheet, tubular, or hollow fibre membrane has a hydraulic permeability to water of 10-100 (30-50) ml/m2/h/mmHg, and by having a diffusive permeability to chloride (Cl-) of more than 10(12) cm/sec x 10 power 4 a diffusive permeability to **vitamin B12** of more than 2(3) cm/sec x 10 power 4 and a diffusive permeability to **vitamin B12** of more than 0.5 cm/sec x 10 power 4, pref. or more than 1.0 cm/sec x 10 power 4. The membrane has a cut-off value of 50000 Daltons. The membrane has a thickness of 20-60 (25-45) micron. and is made from polycarbonate block copolymers, e.g. polyether-polycarbonate block copolymers and organo-polysiloxane-polycarbonate block copolymers; polyacrylonitriles; and modified polyacrylonitriles, e.g. sulphonated polyacrylonitriles. The membrane is produced by casting, extruding, spinning the polymer soln. to form the flat sheet, tube or hollow fibre

which is gelled and, subsequently, washed and dried. The polymer soln. contains of high mol. wt. (1000-20000, pref. 3000-15000 Daltons) swelling agent, used in an amount (1-8 pref. 2-5% by wt.); and is one of polyethylene glycols, polypropylene oxide-polyethylene oxide block copolymers, dextran, inulin, and polyvinyl pyrrolidone, esp. polyethylene glycol of mol. wt. 8000 Daltons.

The membrane is pref. suitable for use in simultaneous **haemodialysis**/haemofiltration. The membrane has characteristics of both **haemodialysis** and haemofiltration membrane at one and the same time.

Dwg.0/0

L11 ANSWER 17 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1982-20058E [11] WPIDS
TI Dry polyether polycarbonate block copolymer membrane - contains water-soluble poly ol drying agent and is rewettable for use in blood **dialysis**.
DC A23 A25 A88 J01 P34
IN CANTOR, P A; FISHER, B S; HIGLEY, W S; STONE, W
PA (GAMB) GAMBRO INC
CYC 13
PI EP 46817 A 19820310 (198211)* EN 33p
R: AT BE CH DE FR GB IT LI LU NL SE
DK 8003774 A 19820419 (198219)
JP 57059548 A 19820409 (198220)
EP 46817 B 19841128 (198448) EN
R: AT BE CH DE FR GB IT LI LU NL SE
DE 3069709 G 19850110 (198503)
ADT EP 46817 A EP 1980-105195 19800901
PRAI EP 1980-105195 19800901
AB EP 46817 A UPAB: 19930915
A novel dry, flexible nonwrinkled, stabilised semipermeable membrane of a block copolymer contg. 5-35 wt.% alkylene ether carbonated units and 96-65 wt.% bisphenol A-carbonate units contains a water-soluble polyol and is capable of being rewetted with water to give a membrane which can be used in a **hemodialysis** appts. for removing middle mol. wt. molecules from blood.

Prepn. of the dry membrane is by imbibing into the water-wet membrane a soln. of the polyol in a volatile solvent carrier and then volatilising all the solvent carrier.

The membrane is heat-sealable and on rewetting the polyol is removed and the membrane regains its original osmotic properties without loss of strength or dimensional change.

After being rewetted a 0.6-1.5 mil membrane has the following properties at 37 deg.C.: NaCl diffusive permeability 650-860 cm/mm x 10 power-4; **vitamin B12** diffusive permeability above 90cm/min x 10 power-4; and ultra-filtration rate less than 4.0 ml/hr/m2/mm Hg.

L11 ANSWER 18 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1982-05733E [03] WPIDS
TI High burst and tear strength **haemodialysis** membrane - composed of a co-polycarbonate with bisphenol and alkylene ether units.
DC A23 A96 J01
IN CANTOR, P A; FISHER, B S; HIGLEY, W S

PA (USGO) US GOVERNMENT
CYC 1
PI US 4308145 A 19811229 (198203)* 12p
PRAI US 1974-454939 19740326; US 1975-636062 19751128; US 1976-668556 19760319; US 1979-100843 19791206
AB US 4308145 A UPAB: 19930915
A membrane (thickness 0.00098-0.00145 in.) of a hydrophilic polycarbonate copolymer (mol. wt. 200,000-750,000 as determined by intrinsic viscosity measurement) consisting of 5-35 wt.% repeating alkylene ether carbonate units and 95-65 wt.% repeating bisphenol A carbonate units has diffusive permeability measured at 37 deg.C to NaCl of 630-750 cm./min. x(10)-4, permeability to urea of 665-815 cm./min. x(10)-4, permeability to **vitamin B12** of 90-110 cm./min. x(10)-4 and ultrafiltration rate of 2.9-5.5 ml./hr.M2/mm.Hg.

The membrane is useful for **haemodialysis**. It has high permeability to solutes in the middle molecular range, as compared with conventional membranes, while maintaining low mol. wt. solutes. It also has improved burst and tear strengths, shelf life and sealability. It is easily and economically produced on a large scale. **Haemodialysis** using the membrane may cause the haematocrit of a patient to be increased or a neurophysiological condition to be improved.

L11 ANSWER 19 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1982-02046E [02] WPIDS
TI Regenerated cellulose **dialysis** membrane for **haemodialysis** - produced by extrusion of spinning soln. consisting of cellulose and amine oxide into precipitating bath.
DC A11 A88 J01 P34
IN BEHNKE, J; BRANDNER, A; GERLACH, K
PA (ALKU) AKZO GMBH
CYC 20
PI EP 42517 A 19811230 (198202)* DE 15p
R: AT BE CH FR GB IT LI LU NL SE
DE 3021943 A 19820121 (198204)
DK 8102540 A 19820118 (198206)
FI 8101840 A 19820129 (198209)
BR 8103677 A 19820302 (198211)
JP 57024606 A 19820209 (198211)
PT 73167 A 19820226 (198212)
NO 8101958 A 19820426 (198220)
ZA 8103985 A 19820514 (198229)
DD 159527 A 19830316 (198328)
EP 42517 B 19840425 (198418) DE
R: AT BE CH FR GB IT LI LU NL SE
CA 1171615 A 19840731 (198435)
DE 3021943 C 19870730 (198730)
JP 04060692 B 19920928 (199243) 6p
ADT EP 42517 A EP 1981-104293 19810604; DE 3021943 A DE 1980-3021943 19800612;
JP 04060692 B JP 1981-88297 19810610
FDT JP 04060692 B Based on JP 57024606
PRAI DE 1980-3021943 19800612
AB EP 42517 A UPAB: 19930915
New regenerated cellulose **dialysis** membrane in the form of a flat foil, tubular foil or hollow filament produced by forming a spinning soln. consisting essentially of cellulose and an amine oxide in a non-solvent displays a dialytic permeability for **vitamin**

B12, adjustable in relation to the rate of ultrafiltration, measured at 20 deg. C which is equal to or greater than tha that calculable from the regression equation.

DLB12=5.3 (UFL) + 2.3 x 10 power -3

(where DLB12 is the dialytic permeability for **vitamin B12**, and UFL is the rate of ultrafiltration, which must be in the range of 0-100,000 ml/min.N).

The **dialysis** membrane has high dialytic permeability in the mean molecular range (500-5000 Dalton), for which **vitamin B12** is a model, at very low ultrafiltration rates, and is partic. suitable for use in **haemodialysis**.

L11 ANSWER 20 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1981-68841D [38] WPIDS
TI Hollow fibre prodn. suitable for blood **dialysis** - by passing spinning soln. of cellulose ester in acetone and formamide with water through annular slit while passing specified core liq..
DC A11 A32 F01 J01
PA (JAPG) NIPPON ZEON KK
CYC 1
PI JP 56096910 A 19810805 (198138)* 5p
PRAI JP 1979-171739 19791229
AB JP 56096910 A UPAB: 19930915
Spinning soln. prepd. by dissolving cellulose ester in mixed solvent of acetone and formamide and contg. 1-12 wt.% of water is extruded through annular slit into strand and core liq. selected from the following is simultaneously introduced into the hollow portion of the strand. Liq. comprises (a) solvent and/or swelling agent for cellulose ester; (b) conc.
water soln. of salt; (c) monoterpene or monoterpene-contg. liquid.

The formamide/acetone ratio is 2.0-1.0, pref. 1.6-1.2. The spinning soln. has a concn. of at least 25, pref. at least 26 wt.%. The salts are e.g. lithium (sodium) chloride, sodium sulphate (carbonate phosphate), etc. The fibre can be hydrolysed into hollow cellulose fibre.

The hollow fibre shows improved filtration of medium mol. wt. substance such as **vitamin B12**, for it forms loose gelled network (three dimensional network structure) during coagulation. It is esp. useful for blood **dialysis**.

L11 ANSWER 21 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1981-42756D [24] WPIDS
TI Hollow fibre prodn. suitable for blood **dialysis** - by extruding soln. of cellulose ester in organic solvent through slit while introducing
specified core liq. into hollow part.
DC A11 A88 F01 J01
PA (JAPG) NIPPON ZEON KK
CYC 1
PI JP 56043414 A 19810422 (198124)*
PRAI JP 1979-117581 19790913
AB JP 56043414 A UPAB: 19930915
Spinning soln. prepd. by dissolving cellulose ester, pref. cellulose acetate, in organic solvent which contains swelling agent for cellulose ester, is extruded through annular slit into strand, while one core liq. selected from among (1) solvent and/or swelling agent for cellulose ester or liq. which contains either or both of them, (2) water soln. which contains water soluble salt in an amt. sufficient to cause phase sepn. and

(3) monoterpene such as limonene or liq. contg. at least 20% of it, is introduced simultaneously into the hollow portion of the strand.

The extruded strand is allowed to run 5-100 cm before it is led into coagulating bath. The concn. of cellulose ester in the spinning soln. is kept at at least 25, pref. at least 26wt.%. The hollow fibre has apparent density of 0.6-1.2 g/cm3 and **vitamin B12** permeability coefft. (K) of 4.8-6.5 x 10 power minus 3 cm/min.

The hollow fibre has no voids and shows improved selective permeability in blood **dialysis**, etc.

L11 ANSWER 22 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1981-42755D [24] WPIDS
TI Hollow fibre prodn. suitable for blood **dialysis** - by extruding cellulose ester dissolved in organic solvent to form strand while passing specified core oil compsn. into hollow part.
DC A11 A88 F01 J01
PA (JAPG) NIPPON ZEON KK
CYC 1
PI JP 56043413 A 19810422 (198124)*
PRAI JP 1979-117580 19790913
AB JP 56043413 A UPAB: 19930915
Spinning soln. prepd. by dissolving cellulose ester in organic solvent in a concn. of 15-32wt.%, is extruded through annular slit into strand, while one core oil selected from among (1) solvent and/or swelling agent for cellulose ester or liq. which contains either, (2) concn. water soln. which contains sufficient water soluble salt to cause phase sepn., and (3) monoterpene such as d-limonene or liq. contg. it, is introduced simultaneously into the hollow portion of the strand.

The extruded strand is allowed to run 5-100, pref. 10-40 cm and is then led into coagulating bath consisting of alkaline liq. with alkali concn. of 0.5-25, pref. 1-10%. The hollow fibre has film thickness of at least 10 microns, ultrafiltration rate of at least 5 ml/hr.m2.mm Hg and **vitamin B12** permeability coefft. (K) of at least 40 x 10 power minus 4 cm/min.

The hollow fibre shows improved properties in blood **dialysis**.

L11 ANSWER 23 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1981-15796D [10] WPIDS
TI Polycarbonate membrane with bisphenol-A - and polyethylene-oxide units, esp. for **haemodialysis** and haemofiltration.
DC A28 A96 J01 P34
IN BEHNKE, J; PITOWSKI, H J
PA (ALKU) AKZO NV
CYC 17
PI DE 2932761 A 19810226 (198110)*
EP 24600 A 19810311 (198112) DE
R: AT BE CH DE FR GB IT LI LU NL SE
NO 8002169 A 19810309 (198114)
DK 8003474 A 19810323 (198116)
FI 8002519 A 19810331 (198117)
JP 56036964 A 19810410 (198122)
EP 24600 B 19831026 (198344) DE
R: AT BE CH DE FR GB IT LI LU NL SE
DE 3065418 G 19831201 (198349)

JP 59027604 B 19840706 (198431)
CA 1173211 A 19840828 (198439)
US 4686044 A 19870811 (198734)
DE 2932761 C 19871119 (198746)
ADT DE 2932761 A DE 1979-2932761 19790813; JP 56036964 A JP 1980-109906 19800812; US 4686044 A US 1985-807766 19851209
PRAI DE 1979-2932761 19790813
AB DE 2932761 A UPAB: 19930915
A membrane in the form of a flat film, a tubular film or a hollow fibre is formed from a block copolymer contg. (a) 5-35 (7-13) wt.% of polyethylene oxide carbonate units with mol.wt. 1000-20,000 (6000-10,000) and (b) 95-65 wt.% of bisphenol A carbonate units. The intrinsic viscosity of the copolymer is 180-300 ml/g (in chloroform at 25 deg.C), and the ultrafiltration rate is 4-200 ml/hour.square m. mm Hg.

Membrane is used partic. for **haemodialysis** and haemofiltration. In partic., the dialytic permeability for **vitamin B12** (test substance for uraemia) at 20 deg.C, w.r.t. the ultrafiltration capacity is defined by DLB12 is (2.5 (+-) 0.25) x square root of UFL, in partic. = (1.3 (+-) 0.2) x square root of UFL. The dry membrane can easily be stored and handled. The membrane contains less than 0.5 wt. % of auxiliaries and foreign substances.

L11 ANSWER 24 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1980-82866C [47] WPIDS
TI Ethylene -vinyl alcohol copolymer hollow fibre membrane - has circular cross-section and three-layer structure contg. two bonded particle layers.
DC A18 A94 A96 F01 J01 P34
IN KAWAI, S; KUBOTSU, A; TANAKA, T; YAMASHITA, S
PA (KURS) KURARAY CO LTD
CYC 5
PI DE 3016040 A 19801113 (198047)*
GB 2050936 A 19810114 (198103)
JP 55148209 A 19801118 (198104)
FR 2454829 A 19801225 (198108)
US 4317729 A 19820302 (198211)
US 4362677 A 19821207 (198251)
GB 2050936 B 19830223 (198308)
JP 62014642 B 19870403 (198717)
JP 62163705 A 19870720 (198734)
PRAI JP 1979-53031 19790427; JP 1986-204294 19800422
AB DE 3016040 A UPAB: 19930902
Membrane, in dry conditions has a circular cross-section with an outer and an inner surface. At least 1 surface has a dense, active skin layer. The outer and the inner surfaces are separated by a 3-layer structure comprising (i) 2 opposite layer each contacting one of the outer and inner surfaces and consisting of particles, bonded to one another and having particle size 0.01-2 (0.05-1); and (ii) an intermediate particle-free homogeneous layer.
Membrane is produced by spinning a C2H4/vinyl alcohol copolymer dope is pref. DMSO, through a hollow fibre-prodn. spinning jet, while a

coagulating liq. is introduced through the central opening of the spinning jet. The spun fibre is passed through a gaseous atmos. and the fibre is drawn.

Membrane can be used as a wet- or dry membrane, e.g. as an artificial kidney or for **haemodialysis**. The membrane has high separating activity, higher permeability to water, low and medium mol. wt. substances, e.g. urea and **vitamin B12**, than standard EVA membranes, and repels higher mol. wt. substances, e.g. proteins and dextran.

L11 ANSWER 25 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1980-53637C [31] WPIDS
TI Hollow-fibre **dialysis** membranes - of polyether-polycarbonate block copolymers with improved permeability and mechanical properties.
DC A23 A25 A88 D15 J01 P34
IN HAYANO, F
PA (ASAH) ASAHI MEDICAL CO LTD
CYC 3
PI DE 2921138 A 19800724 (198031)*
JP 55096162 A 19800722 (198036)
GB 2047161 A 19801126 (198048)
GB 2047161 B 19830112 (198302)
DE 2921138 C 19831020 (198343)
JP 63033871 B 19880707 (198831)
PRAI JP 1979-4311 19790118
AB DE 2921138 A UPAB: 19930902
Hollow-fibre membranes have i.d. 100-500 mu m. wall thickness 5-40 mu m comprising inner and outer layers, diffusion coefft. for NaCl 700-950 x 10-4 cm/min. and for **vitamin B12** 80-150 x 10-4 cm/min., water permeability 2-10ml/m2/h/mmHg and almost impermeable to human albumin.

Their prodn. by extruding a copolymer soln. into the atmos. with injection of a coagulating fluid into the bore to cause expansion and subsequent passage through a second coagulating fluid, is also described.

Used for **haemodialysis** and general **dialysis** use.

Improved **dialysis** efficiency for substances im medium mol. wt. range, with acceptable ultra-filtration rates are obtd. Breaking strength is 5-10kg/cm2, against 0.4kg/cm2 for conventional flat polyether-polycarbonate membranes. The outer layer prevents blocking during storage and improves handling.

L11 ANSWER 26 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1977-88936Y [50] WPIDS
TI Electrolyte removal from e.g. artificial kidney **dialysis** perfusant - by complexing with a macrocyclic cpd. e.g. ether, which contains gp. Vb and/or VIb elements.
DC B05 J01 P32
PA (SUME) SUMITOMO ELECTRIC IND CO
CYC 1
PI JP 52130486 A 19771101 (197750)*
PRAI JP 1976-48048 19760426
AB JP 52130486 A UPAB: 19930901
Removal of electrolytes (I) in perfusant of artificial kidney **dialysis** and peritoneum **dialysis**, comprises formation of

a complex between (I) and a macrocyclic cpd. (III). (III) contains >=2 elements selected from Gps. Vb and
or Vb.

Method permits the miniaturisation of the appts. of artificial kidney
or peritoneum.

(III), e.g., macrocyclic polyether or macrocyclic polyamine, can form
a complex with salts, where (III) act as host. (III) has single ring, condensed polycyclic ring, bridged ring, spiro ring etc. Examples of natural (III) are nonactine, porphyrin and **vitamin B12**
. The perfusant is passed through a packed bed of (III) granulated by microcapsulation or adsorption on a support. Electrolytes, urea, uric acid
and creatinine are removed with (III) and urease or active carbon.

L11 ANSWER 27 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1977-52274Y [30] WPIDS
TI Polyether-polycarbonate copolymer **hemodialysis** membrane - with improved diffusion permeability and ultrafiltration speed.
DC A23 A25 A88 J01 P34
PA (BRDC) BARD INC C R; (GAMB) GAMBRO INC
CYC 13
PI BE 852763 A 19770718 (197730)*
DE 2713283 A 19771013 (197742)
NL 7703513 A 19771004 (197742)
SE 7703669 A 19771024 (197745)
NO 7700947 A 19771024 (197746)
JP 52120597 A 19771011 (197747)
DK 7701287 A 19771205 (197801)
FR 2346032 A 19771202 (197804)
US 4069151 A 19780117 (197805)
GB 1556897 A 19791128 (197948)
CA 1093240 A 19810106 (198107)
CH 632165 A 19820930 (198241)
JP 58000342 B 19830106 (198305)
DE 2713283 C 19850718 (198530)
IT 1077109 B 19850504 (198549)
NL 183496 B 19880616 (198827)
PRAI US 1976-672354 19760331
AB BE 852763 A UPAB: 19930901
An improved **hemodialysis** membrane for sepg. average mol. wt. molecules from blood comprises a sequenced polyether-polycarbonate copolymer contg. 5-35 wt. % recurring oxyalkylene carbonate units and 95-65 wt. % Bisphenol A carbonate units.

The membrane has a diffusion permeability at 37C of 800-860 cm/min. x
10-4 relative to NaCl, >105 cm/min. x 10-4 relative to **vitamin B12**, an ultrafiltration speed <4.0 ml./h.m2 and a thickness <24.1 mu.

The use of waer as gelling agents results in the screen layer of the membrane being formed at the air/gel interface instead of substrate/gel interface. The membrane can thus be more easily detached from the substrates used for casting, thus increasing productivity. It is also mechanically stronger than MeOHP gellefied membranes and than cuprophan membranes.

L11 ANSWER 28 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1977-20311Y [12] WPIDS
TI Ethylene vinyl alcohol copolymer blood **dialysis** separator membrane - having microporous structure and prepd. by wet coagulation from solns..
DC A18 A96 J01 P34
PA (KURS) KURARAY CO LTD
CYC 5
PI DE 2625681 A 19770317 (197712)*
FR 2314215 A 19770211 (197713)
JP 52094361 A 19770808 (197738)
GB 1503270 A 19780308 (197810)
CA 1073822 A 19800318 (198014)
DE 2625681 B 19801030 (198045)
JP 58056379 B 19831214 (198402)
PRAI JP 1975-69873 19750610; JP 1976-10973 19760203
AB DE 2625681 A UPAB: 19930901
The membrane contains no pores having dia. >2 mu. Particles, bonded together to form a membrane, have ave. dia. 100-10000 angstrom, as determined by electron microscopy of a dry membrane.

Micropore structure extends evenly over longitudinal and cross sectional areas. Membrane is prepd. by wet-forming the copolymer. Copolymer is dissolved in dimethyl sulphoxide and/or dimethyl acetamide. Soln. is coagulated in a coagulating bath, under mild conditions corresponding to a coagulating time >=3 secs.

Membrane are used for **dialysis** of blood in artificial kidneys, and pref. have permeability to water 10-200 x 10 -16 cm2 and permeability to **vitamin B12** >0.8 x 10-7 cm2/sec.
Copolymers have good anti-haemolytic and anti-thrombogenic properties, are stable and can be heat-sealed.

In an example, C2H4-vinyl alcohol copolymer contg. 33 mol % C2H4 and having degree of saponification >=99 mol% was dissolved in DMSO to form a soln. having concn. 24 % at 40 degrees C. Soln. was coagulated in water, to a 50 u -thick membrane.

L11 ANSWER 29 OF 29 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
AN 1966-07965F [00] WPIDS
TI Purification of **vitamin b12** by electrodialysis.
DC B00
PA (TAKE) TAKEDA PHARM IND CO LTD
CYC 1
PI JP 38007345 B (196800)*
PRAI JP 1959-7902 19590311
AB JP 63007345 B UPAB: 19930831
Compds. of the **vitamin B12** group in fermentation liquors are freed from impurities by electro-**dialysis** in special dialysers consisting of a cathode chamber separated from a compartment I by a cation exchange membrane. I is separated from a compartment II by a semipermeable membrane and II is separated from an anode chamber by an anion exchange membrane. The crude vitamin soln. is placed in I and 0.3% NaCl in the other chambers. On passing an electric current, cations pass into the cathode chamber or remain in I; anions pass into compartment II and thence to the anode chamber. Since **vitamin B12** forms anions above

the
isoelectric point pH 1.9, they will also move towards the anode but while they pass through the semipermeable membrane, they do not pass through the anion exchange membrane. The result is that they accumulate in compartment II while other anions either remain in I or pass to the anode chamber. Non-electrolytes remain in I except for diffusion. Pt is used for anode and Ni for cathode.

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=> fil medline

FILE 'MEDLINE' ENTERED AT 15:09:33 ON 16 NOV 2000

  FILE LAST UPDATED: 27 OCT 2000 (20001027/UP).  FILE COVERS 1960 TO DATE.

  MEDLINE has been reloaded to reflect the annual MeSH changes made by
  the National Library of Medicine for 2000. Enter HELP RLOAD for details.

  The OLDMEDLINE file segment now contains data from 1958 through 1965.
  Enter HELP CONTENT for details.

  Left, right, and simultaneous left and right truncation are available in the
  Basic Index.  See HELP SFIELDS for details.

  THIS FILE CONTAINS CAS REGISTRY NUMBERS FOR EASY AND ACCURATE
  SUBSTANCE IDENTIFICATION.

=> d his


     (FILE 'MEDLINE' ENTERED AT 14:59:51 ON 16 NOV 2000)
                DEL HIS Y

     FILE 'REGISTRY' ENTERED AT 14:59:53 ON 16 NOV 2000
                E FOLIC ACID/CN
L1              1 S E3
L2              1 S THIAMIN/CN
L3              1 S VITAMIN B12/CN
L4              1 S VITAMIN B6/CN

     FILE 'MEDLINE' ENTERED AT 15:00:29 ON 16 NOV 2000
                E FOLIC ACID/CT
                E E3+ALL
L5          13340 S FOLIC ACID+NT/CT
                E THIAMIN/CN
                E THIAMIN/CT
                E THIAMINE/CT
                E E3+ALL
L6           5779 S THIAMINE+NT/CT
                E VITAMIN B12/CT
                E E3+ALL
L7           9917 S VITAMIN B 12+NT/CT
L8              0 S VITAMIN B 6+NT/CT
                E VITAMIN B6/CT
                E E3+ALL
L9           5382 S PYRIDOXINE+NT/CT
L10         14507 S L1 OR L5
L11          6932 S L2 OR L6
L12         12467 S L7 OR L3
L13          5940 S L9 OR L4
                E DIALYSIS /CT
                E E5+ALL
                E PERITONEAL DIALYSIS/CT
                E E3+ALL
L14          2161 S DIALYSIS SOLUTIONS+NT/CT
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L15        13296 S PERITONEAL DIALYSIS+NT/CT
L16        14274 S L14 OR L15
L17           62 S L16 AND (L10 OR L11 OR L12 OR L13)
L18        40720 S HEMODIALYSIS+NT/CT
L19        30569 S L18/MAJ OR L13/MAJ OR L14/MAJ
L20         3269 S L19 AND (L10 OR L11 OR L12 OR L13)
L21        11254 S (L10 OR L11 OR L12 OR L13)(L) TU./CT
L22         1521 S L21 AND L20
L23            5 S L14 AND (L10 OR L11 OR L12 OR L13)
L24            5 S L14 AND (L10 OR L11 OR L12 OR L13)

     FILE 'MEDLINE' ENTERED AT 15:09:33 ON 16 NOV 2000

=> d que L24

L1             1 SEA FILE=REGISTRY ABB=ON  "FOLIC ACID"/CN
L2             1 SEA FILE=REGISTRY ABB=ON  THIAMIN/CN
L3             1 SEA FILE=REGISTRY ABB=ON  VITAMIN B12/CN
L4             1 SEA FILE=REGISTRY ABB=ON  VITAMIN B6/CN
L5         13340 SEA FILE=MEDLINE ABB=ON  FOLIC ACID+NT/CT
L6          5779 SEA FILE=MEDLINE ABB=ON  THIAMINE+NT/CT
L7          9917 SEA FILE=MEDLINE ABB=ON  VITAMIN B 12+NT/CT
L9          5382 SEA FILE=MEDLINE ABB=ON  PYRIDOXINE+NT/CT
L10        14507 SEA FILE=MEDLINE ABB=ON  L1 OR L5
L11         6932 SEA FILE=MEDLINE ABB=ON  L2 OR L6
L12        12467 SEA FILE=MEDLINE ABB=ON  L7 OR L3
L13         5940 SEA FILE=MEDLINE ABB=ON  L9 OR L4
L14         2161 SEA FILE=MEDLINE ABB=ON  DIALYSIS SOLUTIONS+NT/CT
L24            5 SEA FILE=MEDLINE ABB=ON  L14 AND (L10 OR L11 OR L12 OR L13)

=> d .med 1-5


L24  ANSWER 1 OF 5  MEDLINE
AN   95194229     MEDLINE
DN   95194229
TI   Impact of ultrafiltration on back-diffusion in hemodialyzer.
AU   Waniewski J; Lucjanek P; Werynski A
CS   Institute of Biocybernetics and Biomedical Engineering, Polish Academy of
     Sciences, Warsaw..
SO   ARTIFICIAL ORGANS, (1994 Dec) 18 (12) 933-6.
     Journal code: 8ZK. ISSN: 0160-564X.
CY   United States
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
EM   199506
AB   Ultrafiltration of water from blood to dialysate decreases the rate of
     back-diffusion of solutes from dialysate to blood. Therefore,
     back-clearance (bK) of hemodialyzers may be expressed as bK = bK0--bTrQu,
     where bK0 is the diffusive back-clearance, bTr is the
"back-"transmittance
     coefficient, and Qu is the net ultrafiltration rate. A formula for bK was
     derived from the one-dimensional theory of hemodialyzer, and bTr was
     described as a function of bK0 and the Staverman reflection coefficient.
     The transport parameters, bK0 and bTr, for creatinine and vitamin B12
were                                                                Page 25
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measured in two types of hemodialyzers with negligible back-filtration, using water solutions, and compared with the transport parameters, K0 and Tr, for the case of both diffusion and ultrafiltration from blood to dialysate. bK0 was in general equal to K0. bTr was not different from Tr for creatinine whereas bTr was lower than Tr for vitamin B12.
Experimental
values of bTr for vitamin B12 were in general agreement with theoretical predictions. However, experimental values of bTr for creatinine were
lower
than predicted values. We conclude that the impact of ultrafiltration on back-clearance for slowly diffusing solutes is weaker than on their clearance.
CT Check Tags: Comparative Study; Human
Algorithms
Blood
Body Water: CH, chemistry
Creatinine: BL, blood
Dialysis Solutions: CH, chemistry
Diffusion
*Hemodialysis: IS, instrumentation
Models, Theoretical
*Ultrafiltration: MT, methods
Vitamin B 12: BL, blood

L24 ANSWER 2 OF 5 MEDLINE
AN 94124196 MEDLINE
DN 94124196
TI Hemodialysis: evidence of enhanced molecular clearance and
ultrafiltration
volume by using pulsatile flow.
AU Runge T M; Briceno J C; Sheller M E; Moritz C E; Sloan L; Bohls F O; Ottmers S E
CS Department of Medicine and Surgery, University of Texas Health Science Center at San Antonio.
SO INTERNATIONAL JOURNAL OF ARTIFICIAL ORGANS, (1993 Sep) 16 (9) 645-52. Journal code: GQO. ISSN: 0391-3988.
CY Italy
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199405
AB We describe several in vitro experiments showing evidence that pulsatile flow hemodialysis enhances ultrafiltration volume and molecular clearance as compared with steady flow hemodialysis. A new pulsatile pump and a conventional roller pump were compared using different hollow fiber dialyzers and a simulated blood solution containing urea, aspartame and vitamin B-12 at different flow rates and configurations. Ultrafiltration volume and concentration of urea, aspartame and B-12 were measured and molecular clearance (K) calculated. Ultrafiltration volume markedly increased with pulsatile flow. After 10 min K for urea with pulsatile
flow
was higher in all experiments even when ultrafiltration was prevented. Clearance of aspartame and B-12 also increased with pulsatile flow. We propose three mechanisms by which pulsatile flow is more efficient than steady flow hemodialysis: greater fluid energy, avoidance of molecular channeling and avoidance of membrane layering. We hypothesize that using pulsatile flow in hemodialysis can significantly shorten the duration of

dialysis sessions for most of the patients, and consequently reduce the duration of the procedure and its cost.

CT Check Tags: Comparative Study; In Vitro
Aspartame: ME, metabolism
Cost-Benefit Analysis
*Hemodialysis
Hemodialysis: IS, instrumentation
Hemodialysis Solutions: CH, chemistry
Kinetics
Pulsatile Flow
Ultrafiltration
*Urea: ME, metabolism
Vitamin B 12: ME, metabolism

L24 ANSWER 3 OF 5 MEDLINE
AN 94093189 MEDLINE
DN 94093189
TI Effect of blood-membrane interactions on solute clearance during hemodialysis.
AU Langsdorf L J; Krankel L G; Zydney A L
CS Department of Chemical Engineering, University of Delaware, Newark 19716..
SO ASAIO JOURNAL, (1993 Jul-Sep) 39 (3) M767-72.
Journal code: BBH. ISSN: 1058-2916.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199404
AB Clearances obtained during clinical hemodialysis are smaller than those predicted from in vitro measurements obtained with cell and protein free solutions, although the exact cause of this clearance reduction is unclear. This study examined the specific effects of blood contact on the in vitro clearance of urea, vitamin B12, and polydispersed dextrans using cuprophan, AN69, and polysulfone dialyzers. Blood contact caused a significant reduction in solute clearance, with the actual reduction a complex function of dialyzer type, solute, and ultrafiltration rate. The reduction in urea clearance at zero ultrafiltration ranged from 9% (polysulfone dialyzer) to 19% (cuprophan dialyzer). The percent reduction in clearance increased with increasing solute molecular weight for AN69 and polysulfone dialyzers, with the clearance after blood contact essentially zero for the larger dextrans (molecular weight > 15,000). The relative contributions of fiber blockage and membrane transport were examined using a theoretical model for solute transport during dialysis, with the membrane properties evaluated from independent experiments. The in vitro clearance data obtained in this study were in agreement with clinical observations, suggesting that differences between in vivo and in vitro clearances are largely the result of blood-membrane interactions (i.e., fiber blockage and reduced membrane transport properties).
CT Check Tags: Comparative Study; Human; In Vitro; Support, Non-U.S. Gov't
Dextrans: PK, pharmacokinetics
Equipment Design
***Hemodialysis Solutions: AN, analysis**
*Kidney, Artificial
*Membranes, Artificial
Models, Cardiovascular
Molecular Weight

Ultrafiltration: IS, instrumentation
Urea: BL, blood
Vitamin B 12: BL, blood

L24 ANSWER 4 OF 5 MEDLINE
AN 92387807 MEDLINE
DN 92387807
TI In vivo clearance and elimination of nine marker substances during hemofiltration with different membranes.
AU Kramer B K; Pickert A; Hohmann C; Liebich H M; Muller G A; Hablitzel M; Risler T
CS III Department of Medicine, University of Tubingen, Germany..
SO INTERNATIONAL JOURNAL OF ARTIFICIAL ORGANS, (1992 Jul) 15 (7) 408-12. Journal code: GQO. ISSN: 0391-3988.
CY Italy
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
(RANDOMIZED CONTROLLED TRIAL)
LA English
FS Priority Journals
EM 199212
AB The handling of low, middle and high molecular weight markers was examined in seven stable dialysis patients during hemofiltration with different membranes. Four membranes were examined in a randomized, crossover order (polysulfone, polyamide, AN69 polyacrylonitrile, Asahi polyacrylonitrile) by measuring plasma and dialysate concentrations of phosphate, creatinine, vitamin B12, beta 2-microglobulin, furanic acid, hippuric acid, retinol-binding protein, alpha-1-antitrypsin, and albumin. Sieving coefficients and plasma clearances of beta 2-microglobulin or retinol-binding protein were markedly or slightly lower during hemofiltration with the Asahi polyacrylonitrile membrane than with the other membranes (highest removal with polysulfone/AN69 polyacrylonitrile membranes). No differences of obvious clinical relevance could be seen between the four membranes. A high beta 2-microglobulin removal rate might be important to prevent dialysis-associated amyloidosis.
CT Check Tags: Human
beta 2-Microglobulin: AN, analysis
Aged
Creatinine: AN, analysis
Creatinine: BL, blood
Dialysis Solutions: CH, chemistry
*Hemodialysis
*Hemofiltration
Hippurates: AN, analysis
Hippurates: BL, blood
*Kidney Failure, Chronic: TH, therapy
*Membranes, Artificial
Middle Age
Molecular Weight
Phosphates: AN, analysis
Phosphates: BL, blood
Random Allocation
Retinol-Binding Proteins: AN, analysis
Serum Albumin: AN, analysis

Vitamin B 12: AN, analysis
Vitamin B 12: BL, blood

L24 ANSWER 5 OF 5 MEDLINE
AN 90089193 MEDLINE
DN 90089193
TI A new method of determining the solute permeability of hollow-fiber dialysis membranes by means of laser lights traveling along optic fibers.
AU Ohmura T; Tatsuguchi T; Nishikido J; Yamamoto T; Fushimi F; Nishida O; Sakai K
CS Department of Chemical Engineering, Waseda University, Tokyo, Japan..
SO ASAIO TRANSACTIONS, (1989 Jul-Sep) 35 (3) 601-3.
Journal code: ASA. ISSN: 0889-7190.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199004
AB To develop a new method of determining solute permeability more simply and accurately, the authors employed light from a laser traveling along quartz optic fibers. Dialysis experiments at 310 K were made with a single hollow fiber containing aqueous test solutes. A membrane tube was sealed at either end with quartz optic fibers. Helium-neon and helium-cadmium laser lights emitted from one of these optic fibers into the test solution at wavelengths of 543 and 442 nm for vitamin B12 and cytochrome-C, respectively, were caught by the other optic fiber and detected with a silicon photodiode. The solute permeability for cytochrome-C obtained by this method was almost in agreement with that for beta-2-microglobulin by the radioisotope method. This study demonstrates the usefulness of light from a laser traveling along quartz optic fibers in determining the solute permeability of hollow-fiber dialysis membranes.
CT Check Tags: Comparative Study; Human
Cytochrome c: PK, pharmacokinetics
***Dialysis Solutions: PK, pharmacokinetics**
***Hemodialysis Solutions: PK, pharmacokinetics**
*Kidney, Artificial
*Membranes, Artificial
Permeability
Surface Properties
Vitamin B 12: PK, pharmacokinetics